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Patients Experiences in Magnet and Non-Magnet Hospitals: Is There a Difference?

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PATIENTS EXPERIENCES IN MAGNET AND NON-MAGNET HOSPITALS: IS THERE A DIFFERENCE?

BY

Larry Reese Kidd

A doctoral project submitted to the faculty of the Medical University of South Carolina in partial fulfillment of the requirements for the degree Doctor of Health Administration in the College of Health Professions

DEDICATION

This doctoral project is dedicated to my dear mother, Blanche Juanita Reese Kidd (1918-2012). She was always supportive and positive regarding any endeavor that I sought to achieve. A strong believer that education is the vehicle to expand ones understanding and appreciation of the world around us, she has been my inspiration to continue to learn and master new things. While no longer physically here, I have felt her spirit cheering me on across the finish line. I know that she would be most proud that, once again, I took her advice and stuck with the challenge and accomplished another major milestone on my life journey.

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Degree of Doctor of Health Administration

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Chairperson: Abby Kazley, Ph.D.
Committee: Andrea White, Ph.D. & Marcia Grant, Ph.D.

Study Aim: To determine the relationship between hospital Magnet status designation and patient satisfaction.

Data Sources: Secondary sources, the American Nurses Credentialing Center, the American Hospital Association, and Hospital Compare HCAHPS satisfaction survey data.

Methods: Independent *t* tests were used to examine the univariate relationship between Magnet designation and 10 satisfaction survey indicators. A multivariate analysis was conducted of the 10 patient satisfaction survey indicators on Magnet designation while controlling for organization variables. It was predicted that Magnet status would be associated with 7 of the 10 measures.

Results: Magnet status was found to be positively and significantly associated with 9 of the 10 satisfaction measures. Only one measure was not significant.

Conclusions: Magnet status is positively associated with 9 of 10 patient satisfaction measures. Health care organizations desiring to improve patient satisfaction outcomes

should consider investing in improvements to the work environment as a method for achieving this goal.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

CHAPTER I: INTRODUCTION

It has become increasingly important to institute measures to improve the satisfaction of patients in hospitals. Some of the major drivers contributing to this area of focus have to do with changes in reimbursement for services provided by hospitals (Carlson 2012; Kahn, Ault, Isenstein, Potez, & Van Gelder, 2006; Press & Fullam, 2011; Wolosin, Ayala & Fulton 2012; Zamora 2012). As patients have become better educated and more assertive consumers of health care services, their level of satisfaction with services has become a critical concern for health care professionals (Bodenheimer, 2008; Cantlupe, 2012; Sovie & Jawad 2001). In a survey that was conducted in 2004 on the quality of health care in the United States, 55% of patient respondents reported dissatisfaction with health care, up from 44% in 2000 (Kaiser Family Foundation, Agency for Healthcare Research and Quality, & Harvard School of Public Health, 2004). Close to half of those respondents reported they were concerned about the safety of health care.

Mandates and regulations have been imposed by several regulatory agencies and accreditation organizations, reflecting in part on how health care organizations are evaluated. Patient satisfaction has become a required patient outcome measure by The Joint Commission (2007). The Agency for Healthcare Research and Quality (AHRQ) has designated patient satisfaction as a criterion for evaluation of overall quality of care along

with mortality and morbidity (AHRQ, 2012). Patient satisfaction is a core measure of the Centers for Medicare and Medicaid Services (CMS, 2012) reporting requirements for hospitals to qualify for full payment, as of fiscal year 2008 inpatient prospective payment system (IPPS). It was also noted in the Institute of Medicine Report, Crossing the Quality Chasm: A New Health System for the 21st Century (IOM, 2001) that patient- centered care was one of the six priority areas for improvement in the U.S. health care system. During recent actions, the U.S. Congress authorized the Hospital Inpatient Value-Based Purchasing (VBP) program as part of the Affordable Care Act (IPPS, 2012), which is aimed at not only reducing harm to patients, but also improving the patients' experience of care.

Ross, Frommelt, Hazelwood, and Chang (1987) defined patient satisfaction as a patient's affective or emotional response to his or her (cognitive or knowledge-based) evaluation of the health care provider during a health care consumption experience. Patients who are satisfied with their care have been shown to have better clinical outcomes. Patients with higher overall satisfaction and satisfaction with discharge planning are associated with lower 30-day risk-standardized hospital readmission rates after adjusting for clinical quality (Boulding, Glickman, Manary, Schulman & Staelin, 2011).

There is evidence to indicate consistent positive associations between patient experience, patient safety, and clinical effectiveness. Patients with positive experiences have been shown in both self-rated and objectively measured health outcomes; adherence to recommended clinical practice and medication; preventative care, such as health-promoting behavior, use of screening services, and immunization; and resource use, such

as hospitalization, length of stay, and primary-care visits post hospitalization, (Doyle, Lennox, & Bell, 2013).

Satisfied patients, as with customers in other industries, are likely to be good sources of informal referrals for hospitals through communicating their experiences to others outside the hospital. The evidence strongly suggests that patients with high satisfaction with care are more likely to return and continue to use the medical services (Laschinger, Hall, Pedersen, & Almost, 2005; Otani & Kurz, 2004; Peterson, Charles, DiCenso, & Sword, 2005; Raper, 1996; Ware, Wirght, Snyder, & Chu, 1975) and recommend these services to others (Kutney-Lee et al., 2009).

Patients who are satisfied with their care are less likely to file malpractice claims against the hospital and its providers of services. In reviewing litigation risk, findings suggest that minimum or low patient satisfaction scores were significantly associated with malpractice activity (Fullam, Garman, Johnson, & Hedberg, 2009).

The impact of improved patient satisfaction scores on a hospital's bottom line is only going to increase, providing even further incentives for hospital administrators to pay attention to these results and seek ways to improve. Under the government's value-based purchasing program, the Centers for Medicare and Medicaid Services plans to pay bonuses from an $850 million pool to hospitals that score above average on certain quality measures (Cantlupe, 2012). In fiscal 2013, CMS announced that patient satisfaction scores will account for 30% of the bonuses, while clinical process of care will make up 70%.

The focus on patient satisfaction has meant a shift from relying solely on clinical outcomes, such as pressure ulcers, falls, mortality, and morbidity and resulting in more

research on patient satisfaction (Bond & Thomas, 1992; Lynn, McMillen, & Sidani, 2007: Tomlinson & Ko, 2006). One important component of overall patient satisfaction is satisfaction with nursing care. Some researchers have identified satisfaction with nursing care as the most important predictor of overall satisfaction with hospital care (Abramowitz, Cote, & Berry, 1987; Cleary, Keroy, Karapanos, & McMullen, 1989; Delbanco et al., 1995; Drachman, 1996; Greeneich, 1993; Nelson & Larson, 1993). Professionals in the nursing field have promoted the use of patients' perceptions of the quality of nursing care in addition to traditional outcome measures as an important outcome of patient satisfaction (McDaniel & Nash, 1990).

Magnet designated hospitals have the potential to impact many aspects of the quality of care for hospitalized patients both in terms of clinical outcomes, as well as satisfaction with the hospital experience. Studies have shown that hospitals through adoption of the American Nurses Credentialing Center (ANCC, 2008) Magnet Designation Program, have been identified as having processes and structures in place that support good nursing care, therefore providing a benchmark to measure quality of care (Ulrich, Woods et al., 2007). Magnet hospitals are known for being good places for nurses to work and, therefore, serving as a "magnet" for attracting and retaining nurses even during times of nursing shortages. During the mid-1980's, members of the American Academy of Nursing (AAN) conducted a study in which they identified hospitals that were listed as having good environments for the practice of nursing (Aiken, Havens, & Sloanes, 2000). At that time the focus was the hospitals' ability to recruit and retain nurses. From the group of hospitals that were reviewed, 41 of those became the first Magnet hospitals. Hospitals that are designated Magnet are considered to

have work cultures that promote excellence in patient care through the creation of work environments conducive to nurses being able to thrive and do their best work. Researchers have found that Magnet hospital nurses are more satisfied (Brady-Schwartz 2005; Laschinger, Almost, & Tuer-Hodes, 2003; Schmalenberg & Kramer, 2008; Ulrich, Buerhaus et al., 2007; Upenieks, 2002), have less emotional exhaustion (Aiken & Sloane, 1997; Friese, 2005), more collegial physician-nurse relationships (Laschinger et al., 2003), better team work among nursing staff (Ulrich, Woods et al., 2007), enhanced work environments (Friese, 2005), more opportunity to influence decisions and empowerment (Laschinger et al., 2003; Ulrich, Buerhaus et al., 2007), more acceptable workloads (Lacey et al., 2007), and a higher level of staffing (Friese, 2005; Lake, Shang, Klaus, & Dunton, 2010) than non-Magnet organizations.

The most commonly used measure to represent patient outcomes is nurse perception of the quality of care (Lundmark & Hickey, 2006). Even fewer studies have looked at the satisfaction of patients with their experience in the Magnet versus non-Magnet hospital environment. This study attempts to fill the gap by examining a large sample of U.S. hospitals by comparing those that are Magnet versus non-Magnet designated on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey question of satisfaction with communication by nurses. Even though Magnet designated hospitals have been recognized as providing excellent patient care and service, there is minimal evidence to show that Magnet designation makes a difference in the outcome of the patient experience. One of the requirements of Magnet hospitals is to collect data on patient satisfaction and to address gaps through process improvements;

however, it is not clearly understood if the patient experience related to nursing care is improving and in what setting might there be a difference.

The early Magnet designation process put relatively little weight on patient outcomes. Donabedian (1992) defined quality care in terms of a structure-process-outcome paradigm. Structure is defined as the physical and organizational properties of the settings in which care is provided. Process is what is done for patients, and outcome is what is accomplished for patients. Donabedian asserted that people look for evidence, both direct or indirect, that their treatment strategy was the best possible in that setting (structure), what happened being the process and then the outcome. In the new model, American Nurses Credentialing Center (ANCC) Application Manual (2008), weight of outcomes exceeds that of structure and process, with more focus on outcomes when considering Magnet hospitals for re-designation. The question for the future is not "What do you do?" or "How do you do it?", but rather "What difference have you made" (Wolf, Triolo, & Ponte, 2008, p. 203).

Problem

Magnet designation by hospitals in the United States has become a much sought after award and has gained wide acceptance and recognition as the optimal environment for nurses to work and patients to receive care. However, research on Magnet designation has mainly been focused on nurse sensitive outcomes, such as staffing, nurse turnover rates, and the satisfaction of nurses with their overall employment. There is limited research as to the impact of the Magnet designation on patient outcomes in hospitals. Therefore, research is very much needed in determining to what extent Magnet designation results in better patient satisfaction.

Purpose

The purpose of this study was to determine if a hospital's Magnet designation makes a difference in the outcome of patient satisfaction in comparison to non-Magnet hospitals.

Research Question

The following research question was explored in this study: What is the relationship between hospital Magnet status and patient satisfaction?

Conceptual Framework

In order to understand the organizational context of hospitals that have obtained Magnet designation, it is key to identify organizational concepts and their relationship to each other. By examining a group of concepts, such as those common to Magnet designated hospitals, and their relationship to one another can assist in providing a structure to describe, analyze, and evaluate the structure, process, and outcomes of the health care system (Aday, Blegley, Lairson & Slater, 1998).

The Hospital Organization, Nursing Organization, and Patient Outcomes (HNPO) (Figure I) conceptual framework by Aiken, Clarke, and Sloane (2002) has been used by many researchers to investigate the relationship between characteristics found in hospital organizations, such as Magnet designated hospitals. The HNPO framework is based on Donabedian's (1966) early work on outlining structure, process, and outcomes. Donabedian noted that organizational structure and processes of care must be evaluated based upon the outcomes or end result of care and that structures, process, and outcome are interrelated and a change to one impacts the others.

The HNPO framework delineates the structure found in hospital organizations which define the provision of care. The hospital organization can be described by characteristics, such as control/ownership, teaching/non-teaching, staffed bed size, technology/equipment, and various processes of care. Herald, Alexander, Fraser, and Jiang (2008) identify the structure as an indirect means of measuring quality, because it makes quality care possible but does not guarantee that it is provided. The actual care or service provided to the patient can potentially provide greater influence on quality outcomes. Outcomes are the end result of care. The HNPO framework clearly identifies and delineates the concepts of the hospital organization, linking process of care, which is identified as support for good nursing care that results in positive nurse and patient outcomes.

The Magnet designation in hospitals reflects the structure in which nurses practice and deliver care and services within the organization. The Magnet structure drives the approach to the various processes that are established and implemented to improve the clinical quality and experiences of patients that nurses provide in the organization. The supportive work environment of Magnet hospitals is conductive to nurses' delivery of patient care and service that are patient centered and those that impact the outcomes. The ANCC reviews hospitals based on set criteria to validate that the elements considered most important to achieving the Magnet environment are, in fact, present on certification and then on at least an every 4-year review to establish that the requirements have been sustained over time.

The framework identifies support for nursing care as a component of HNPO. It has been noted that hospitals designated as Magnet provide the support for nursing care

in the way of allocation of resources, nurse autonomy, nurse control over their practice, and positive relations between nurses and physician. Evidence suggests that when hospitals provide support and place emphasis on these areas, nurse outcomes are positively affected (Kramer & Schmalenberg, 2002; Ulrich, Woods et al., 2007). These hospitals show a lower turnover rate of nurses and a primary focus on providing excellent care. Hegyvary (1991) points out that outcomes research should focus primarily on patients rather than providers of care. It is, therefore, important to determine which hospital characteristics, such as Magnet versus non-Magnet designation, are best predictors of patient outcomes in order to improve the patient experience.

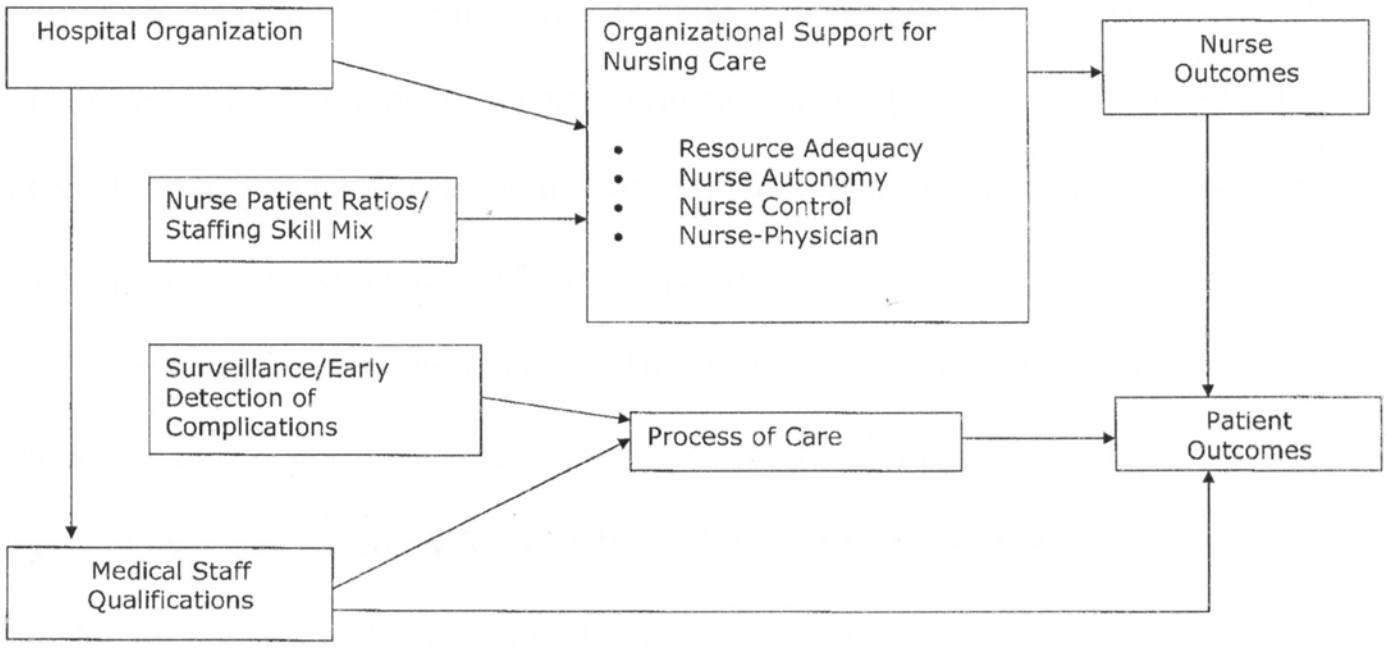

Figure 1 – Hospital Organization, Nursing Organization, and Patient Outcomes

One of the areas that Magnet designated hospitals is required to monitor and report on formally as part of their ongoing performance improvement program is patient satisfaction. The ANCC requires that quarterly patient satisfaction data are aggregated at the organization, department, unit type, or unit level. The data collected must be

benchmarked against other organizations in the selected vendor's data base. The data must depict patient satisfaction with nursing addressing four out of five areas of focus:

- Pain
- Education
- Courtesy and respect from nurses
- Careful listening by nurses
- Response time

The data are evaluated to assess the organization's performance relative to the mean, median, or other benchmark statistic of the selected national database used. Analysis must explain the scoring range and how the organization fairs overall compared to the mean, median, or other benchmark statistic. The analysis and evaluation of data and resultant action plans related to the patient satisfaction with nursing, addresses four of the topics that are required in the survey questions.

The federal survey based on HCAHPS paints a sobering picture of patients' experiences in U.S. hospitals, with many respondents reporting dissatisfaction with some aspects of their care (Bacon & Mark 2010). Of the survey items responded to by patients available for viewing by the public on Hospital Compare, many patients reported a lack of courtesy and respect, problems managing their pain, and poor communication with providers. Understanding patients' satisfaction is important, so that caregivers can better anticipate patient needs and develop plans to meet them.

The IOM (2013), in its recommendations on improving cancer care, continues to identify the lack of patient centeredness in responding to the needs of patients requiring these services. The report includes, as part of the identified opportunities to improve a

recommendation, that professional educational programs for members of the cancer care team include comprehensive and formal training to improve communication with patients (IOM, 2013).

Magnet designation has been sought by many hospitals with the anticipation that improvements in the nursing work environment would lead to better patient outcomes. Magnet research has focused heavily on the work environment and the structural elements present within the organization supporting nursing practice rather than the measurement of patient outcomes specifically (Goode, Blegen, Park, Vaughn, & Spetz, 2011).

According to Wolf, Lehman, Quinlin, Hoffman, and Zullo (2008), patient satisfaction includes the degree of care experience, the type of care received, and whether this experience met the patient's preadmission expectations in the health care environment. It was identified in research by Haskard, DiMatteo, and Heritage (2009) that solid nurse-patient communication improves satisfaction and enhances quality outcomes. This further underscores the importance of poor communication as a patient safety risk.

Significance

Although many findings in the literature tend to demonstrate a consistent relationship between Magnet hospital characteristics and favorable nurse or patient outcomes, most of the research is based on subjective methods. There is a considerable cost, as well as investment of time, for organizations to implement the requirements of becoming Magnet designated. While the exact cost to achieve Magnet designation is not well documented in the literature, there is significant cost associated with putting the

structure in place to support the processes, e.g., cost of staff to attend committee meetings, conduct evidenced based research, participate in various training, supplies for tracking and managing data requirements, among other incremental expenses throughout the preparation period. Preparing a hospital for Magnet designation has been reported to take anywhere from 2 to 10 years (Doloresco, Bradham, Deininger, Searman, & Quigley, 2004). Doloresco et al. (2004) estimated the cost at one Florida hospital from preparation through receiving Magnet designation to be $144,413.00.

Fees associated with the process as published on the ANCC website are significant and include an application fee, appraisal fee, document review fee, site visit fee, extension fee, and international organization surcharges. The main application fee is $4,200, and the appraisal fees vary based on size, as outlined in Table 1. The documentation review fees for the Magnet evaluator team leader is $2,500, and for each Magnet evaluator team member $2,000. Site visit fees are billed at the rate of $1,800 daily per appraiser. All travel, hotel, and per diem expenses for each Magnet appraiser are the responsibility and covered by the applicant hospital. If at a later date, the organization decides to change the documentation submission date, an extension may be requested. A fee of $7,500 is then assessed. The extension is for one time only, and the new date for submission must be within 6 months of the previous date.

Table 1

Appraisal Fee for Acute Care In-Patient Settings and Long Term Care

Hospital Beds	Appraisal Fee
100 or less	$13,750
101 – 299	$15,100
300 – 399	$24,150
400 – 499	$35,000
500 – 749	$45,280
750 – 949	$54,350
950+	$57,850 +$65 per bed over 900

Given that up to 30% of a hospital's Medicare reimbursement can be impacted by patient satisfaction scores, it would be important for researchers and health care institutions to know the impact of nursing on patient satisfaction scores, which in turn would offset some of the cost of becoming Magnet designated should there be higher levels of satisfaction in Magnet hospitals. The findings of this study would address whether or not this is an area where organizations might be receiving a favorable return on their investment. In addition, the study would contribute knowledge to the ANCC efforts to shift the focus of Magnet designated hospitals to that of patient outcomes and generate evidence that is measured. This work would address the question as to what areas of patient outcomes might the Magnet hospital impact and to what degree nurses working in these organizations are able to impact the satisfaction of patients. The findings could have implications for further study based on the analysis of the results.

Patient satisfaction with nursing care has consistently had the highest correlation with overall satisfaction and is considered a major determinant of the patient's overall satisfaction level (Atkins, Marshall, & Javalgi, 1996). For example, Wolf et al. (1998) found a highly statistically significant relationship between patient reports of hospital care and satisfaction with nursing care (pp. 103-104). Schmidt (2003) related that "nursing represents a constant presence in the experience of hospitalized patients, it seems logical that satisfaction with nursing care has a primary influence on patients' overall satisfaction with their experience" (p. 393).

Carman (1990), in a sample of 600 patients, identified hospital service quality factors by using the SERVQUAL instrument. The factors measured were tangible accommodation, food, privacy, nursing care, explanation of treatment, access, and courtesy. The results indicated that nursing care was considered by patients to be more important than any of the other factors.

Doering (1983) conducted a study to determine factors influencing inpatient satisfaction with care, using a 11-item, 4-point Likert scale designed by the hospital's patient satisfaction team. The response rate to the mailed survey was 58%. The results reported out by Doering were in terms of association, using Cramer's V coefficient. Satisfaction with nursing care was more strongly associated with overall satisfaction than any of the other services specified in the closed question survey.

Given that the research on patient outcomes in Magnet hospital environments is limited, studying the impact of Magnet hospitals on nursing care of the patient experience would contribute to further evaluate outcomes. The information gained from this study could be of particular interest to health care leaders considering striving for Magnet

designation for their respective hospitals. In addition, the ANCC, the sponsor of the Magnet program, would have interest in the results given their new agenda for the program focusing on patient outcomes and to further define in what areas of patient care Magnet status designation may be making a difference.

CHAPTER II: LITERATURE REVIEW

In order to understand the relationship between Magnet status and patient outcomes, the literature was reviewed as it relates to the work environment and patient outcomes. In addition, the concept of Magnet designation, which is a nationally recognized program awarded to hospitals meeting criteria for good nursing care, was explored.

Basic to the challenges and issues in the provision of quality health care and patient safety is the role of the registered nurse (RN). Nurses make up more than half of all health care workers, with their role defined as focusing on giving care to patients. Nursing care provided to each patient is achieved through assessment, surveillance, and early and appropriate interventions resulting in better outcomes for patients (Kahn et al., 1990; Meyer & Lavin, 2005; Mitchell & Shortell, 1997).

While structure and process continue to be measured and studied, outcomes have come to the forefront and are considered the standard for measuring health care quality. Patient outcomes can be affected by other variables, such as the complexity, and assessment of each patient, the context in which care is provided (such as, organizational characteristics), and development of patient-provider relationships (Irvine, Sidani, & Hall, 1998). Outcomes are the result of patient care and have been described as actual observable changes in the patient condition resulting from care (Donabedian, 1988; Mitchell, Ferketch, & Jennings, 1998; Sidani, Doran, & Mitchell, 2004).

Magnet Designation Program

In 1981, the American Academy of Nursing created a national task force to study the causes of nursing shortages at many hospitals in the United States. The task force identified that the shortage at some hospitals was presenting problems in the hospital's ability to provide quality care. The task force also knew that there were hospitals where there were sufficient nurses to provide care, and the staff working in these hospitals appeared to be satisfied with their employment. These hospitals were referred to as "Magnet hospitals" because of their ability to attract and retain experienced nurses (McClure, Poulin, Sovie, & Wandelt, 2002).

Fellows of the American Academy of Nursing (FAANs) representing various geographical regions of the United States were assigned to learn about the hospitals in their geographical regions known for good nursing care and good places for nurses to work. Criteria used in the selection process by the fellows included: (a) the hospital had to have a low nursing turnover rate, (b) the hospital had to have a reputation by nurses as a good place to work, and (b) the hospital had to be one of several in the area, so that competition existed for nursing employment opportunities (McClure et al., 2002). Of those identified, 153 hospitals were included for study. After analysis of data related to recruitment and retention, 41 hospitals were selected to receive Magnet designation.

Several years after the original Magnet study, the American Nurses Association (ANA) created a program through the American Nurses Credentialing Center (ANCC) whereby hospitals can be considered for Magnet designation through an application process and may only proceed for review after meeting certain criteria (Urden &

Monarch, 2002). The process consists of an assessment and application process completed by the hospital, followed by a document review demonstrating how the hospital meets established Magnet criteria. A site visit is conducted by a Magnet appraiser if the applicant hospital has scored high enough on the combined standards. Providing a site visit, if approved, consists of meetings with groups and individuals at the hospitals and review of documents. The results of the findings are collated and presented to the Commission on Magnet Status, who makes the final decision in awarding the designation which is for a period of 4 years.

Currently, there are 390 Magnet-designated hospitals in the United States. In 2007, the Commission on Magnet Recognition engaged in a study using multivariate structural analyses of the forces of Magnetism. The analysis examined data from 147 facilities and 164 sources of evidence. Factor analysis, cluster analysis, and multidimensional scaling were used to integrate the 14 forces of magnetism into five model components. This became known as the new Magnet model by ANCC, moving the focus from structure and process to outcome (ANCC, 2008). The importance of the characteristics is that have been positively associated with attracting and retaining nurses. The new model focuses on the achievement of improving empirical outcomes and described by the ANCC.

The 14 Forces of Magnetism as Identified by the ANCC

Force 1: Quality of Nursing Leadership

Knowledgeable, strong, risk-taking nurse leaders follow a well-articulated, strategic and visionary philosophy in the day-to-day operations of nursing services. Nursing leaders, at all organizational levels, convey a strong sense of advocacy and support for

the staff and for the patient. The results of quality leadership are evident in nursing practice at the patient's bedside.

Force 2: Organizational Structure

Organizational structures are generally flat, rather than tall, and decentralized decision-making prevails. The organizational structure is dynamic and responsive to change. Strong nursing representation is evident in the organizational committee structure. Executive-level nursing leaders serve at the executive level of the organization. The Chief Nursing Officer typically reports directly to the Chief Executive Officer. The organization has a functioning and productive system of shared decision-making.

Force 3: Management Style

Health care organization and nursing leaders create an environment supporting participation. Feedback is encouraged, valued, and incorporated from the staff at all levels. Nurses serving in leadership positions are visible, accessible and committed to effective communication.

Force 4: Personnel Policies and Programs

Salaries and benefits are competitive. Creative and flexible staffing models that support a safe and healthy work environment are used. Personnel policies are created with direct care nurse involvement. Significant opportunities for professional growth exist in administrative and clinical tracks. Personnel policies and programs support professional nursing practice, work/life balance, and the delivery of quality care.

Force 5: Professional Models of Care

There are models of care that give nurses responsibility and authority for the provision of direct patient care. Nurses are accountable for their own practice, as well as

the coordination of care. The models of care (i.e., primary nursing, case management, family-centered, district, and holistic) provide for the continuity of care across the continuum. The models take into consideration patients' unique needs and provide skilled nurses and adequate resources to accomplish desired outcomes.

Force 6: Autonomy

Autonomous nursing care is the ability of a nurse to assess and provide nursing actions as appropriate for patient care based on competence, professional expertise, and knowledge. The nurse is expected to practice autonomously, consistent with professional standards. Independent judgment is expected within the context of interdisciplinary and multidisciplinary approaches to patient/resident/client care.

Force 7: Quality of Care

Quality is the systematic driving force for nursing and the organization. Nurses serving in leadership positions are responsible for providing an environment that positively influences patient outcomes. There is a pervasive perception among nurses that they provide high quality care to patients.

Force 8: Quality Improvement

The organization possesses structures and processes for the measurement of quality and programs for improving the quality of care and services within the organization.

Force 9: Consultation and Resources

The health care organization provides adequate resources, support, and opportunities for the utilization of experts, particularly advanced practice nurses. The

organization promotes involvement of nurses in professional organizations and among peers in the community.

Force 10: Community and the Health Care Organization

Relationships are established within and among all types of health care organizations and other community organizations, to develop strong partnerships that support improved client outcomes and the health of the communities they serve.

Force 11: Image of Nursing

The services provided by nurses are characterized as essential by other members of the health care team. Nurses are viewed as integral to the health care organization's ability to provide patient care. Nursing effectively influences system-wide processes.

Force 12: Professional Development

The health care organization values and supports the personal and professional growth and development of staff. In addition to quality orientation and in-service education addressed earlier in Force 11, Nurses as Teachers, emphasis is placed on career development services. Programs that promote formal education, professional certification, and career development are evident. Competency-based clinical and leadership/management development is promoted and adequate human and fiscal resources for all professional development programs are provided.

Force 13: Teaching

Professional nurses are involved in educational activities within the organization and community. Students from a variety of academic programs are welcomed and supported in the organization and community; contractual arrangements are mutually beneficial. There is a development and mentoring program for staff preceptors for all

levels of students (including students, new graduates, experienced nurses, etc.). In all positions, staff serve as faculty and preceptors for students from a variety of academic programs. There is a patient education program that meets the diverse needs of patients in all of the care settings of the organization.

Force 14: Interdisciplinary Relations

Collaborative working relationships within and among the disciplines are valued. Mutual respect is based on the premise that all members of the health care team make essential and meaningful contributions in the achievement of clinical outcomes. Conflict management strategies are in place and are used effectively, when indicated.

New Magnet Model

The new Magnet model organizes the 14 Forces of Magnetism into 5 Model Components, with a focus on outcome measures. The ANCC provides explanations of each component and the connections to the original 14 Forces of Magnetism, as follows.

Transformational Leadership

The organization's senior leadership team creates the vision for the future, and the systems and environment necessary to achieve that vision. They must enlighten the organization as to why change is necessary and communicate each department's part in achieving that change. They must listen, challenge, influence, and affirm as the organization makes its way to the future.

Forces of Magnetism represented:

- Quality of nursing leadership (Force 1)
- Management style (Force 3)

Structural Empowerment

Staff need to be developed, directed, and empowered to find the best way to accomplish the organizational goals and achieve desired outcomes. This may be accomplished through a variety of structures and programs.

Forces of Magnetism represented:

- Organizational structure (Force 2)
- Personnel policies and program (Force 4)
- Community and the health care organization (Force 10)
- Image of nursing (Force 12)
- Professional development (Force 14)

Exemplary Professional Practice

This entails a comprehensive understanding of the role of nursing; the application of that role with patients, families, communities, and the interdisciplinary team; and the application of new knowledge and evidence. The goals of this component are more than the establishment of strong professional practice; it is what professional practice can achieve.

Forces of Magnetism represented:

- Professional models of care (Force 5)
- Consultation and resources (Force 8)
- Autonomy (Force 9)
- Nurses as teachers (Force 11)
- Interdisciplinary relationships (Force 13)

New Knowledge, Innovation, and Improvements

Magnet organizations have an ethical and professional responsibility to contribute to patient care, the organization, and the profession in terms of new knowledge, innovation, and improvements.

Empirical Quality Results

Outcomes need to be categorized in terms of clinical outcomes related to nursing, workforce outcomes, patient and consumer outcomes, and organizational outcomes. Quantitative benchmarks should be established. Forces of Magnetism represented: Quality of Care (Force #6)

Magnet Designation and Outcomes

One of the early studies (Aiken, Smith, & Lake 1994) compared the original Magnet hospitals with 195 non-Magnet hospitals. These researchers found that after adjusting for differences in predicted mortality, the Magnet hospitals were found to have a 4.6% lower mortality rate. In an attempt to measure organizational characteristics in Magnet hospitals, Kramer and Hafner (1989) developed the Nursing Workforce Index (NWI). This was a 65-item instrument containing a list of organizational factors thought to have influence on job satisfaction.

Since then, NWI was also used to identify the lack of identified organizational characteristics. Kramer and Schmalenberg (2002) used a revised version of the NWI to determine what factors are important to nurses in giving quality care, labeling these identified factors " the essentials of magnetism" (p. 29). The organizational characteristics were identified as:

- Clinically competent coworkers
- Strong nurse-physician relations
- Autonomy in nursing practice
- Control over nursing practice
- Nursing leadership
- Adequate staffing
- Culture focused on patients

These essential characteristics provide the foundation by which nursing research on Magnet hospitals has focused and is reviewed below.

Hinshaw (2002) described competence in coworkers as having a sense of trust in a colleague's or coworker's ability to provide quality care to patients. Clinical competency has been linked with nursing experience through time spent in caring for patients (Benner, 1984; Benner &Tanner, 1987). Kramer and Schmalenberg (2002) identified competence in co-workers as the highest characteristic ranked by nurses and identified as being important to productivity and patient care. In follow up to the work by Kramer and Schmalenberg (2002), Cimmiotti, Quinlan, Larson, Pastor, and Stone (2005) compared Magnet, non-Magnet, and those hospitals in the process of application to Magnet designation on a number of organizational variables. In the multivariate and multilevel modeling, clinical competency of nursing staff in the Magnet designated hospitals was the only variable found statistically significant.

Strong physician-nurse relations and good communication are important and have been demonstrated to improve patient outcomes and reduce nurse turnover through improved nurse satisfaction. In Mitchell and Shortell's (1997) integrated literature review

of 81 research articles comparing organization characteristics, mortality, and over adverse events, they determined that two variables – collaboration between nursing staff and physicians and adequate nurse surveillance – consistently had a positive effect on lowering mortality rates. Controlling for patient severity of illness, variables, such as good communication, perceived shared responsibility, and strong collaborative decision-making, demonstrated positive effects on patient mortality, length of stay, and readmission rate to the Intensive Care Units (Baggs, Ryan, Phelps, Richeson, & Johnson, 1992; Baggs et al., 1999; Shortell, Rousseau, Gillies, Devers, & Simons, 1991).

Early research findings have encouraged hospitals and other health care organizations to develop greater nurse autonomy, advancing staff nurse decision-making that uses evidence based interventions in clinical decisions (IOM, 2004). Lake et al. (2010) compared fall rates in Magnet versus non-Magnet hospitals and found that the rates for patient falls were 5% lower in Magnet hospitals.

Kramer and Schmalenberg (1991) identified control over nursing practice as a major difference between Magnet and non-Magnet hospitals. Magnet hospitals have developed organizational structures, such as shared governance and participatory management, to support nurses' control over their practice. Organizational structure is important for participative management, since it provides a mechanism for decision-making to occur at the staff nurse level of the organization, elevates the status of nursing within organizations, and creates empowerment and autonomy, thus enhancing nurse satisfaction (Laschinger, Almost, & Tuer-Hodes, 2003; Manojlovich & Laschinger, 2002; Perley & Raab, 1994; Upenieks, 2000).

Supportive nursing leadership, which includes both the nurse executive and nursing managers, in hospitals has been identified as a key characteristic. Supportive nursing leadership is described as a decentralized organizational structure that supports a philosophy of participatory decision-making and accountability at the lowest level in the organization (Kramer & Schmalenberg, 2002). It is an organization's structure which enables nurses to fully use their knowledge and expertise, thus empowering them to make decisions related to patient care. Aiken, Clarke, and Sloane (2002) identified nursing leadership support as a critical factor in the provision of quality patient care, improved nurse satisfaction, and decreased nurse burnout.

Boyle (2004) was able to associate a high level of nursing mangers support to lower levels of negative patient outcomes, such as mortality rates and pressure ulcer prevalence. However, it was noted that there was a demonstrated higher failure to rescue rate in the same setting. The limitation of this sample size does call attention to whether or not the results can be generalized to other organizations.

Magnet hospitals are reported to place high importance on nurse's continuing education and advanced degrees to increase the knowledge base for patient care improvements. Nursing education has been linked to patient outcomes. One such study by Aiken, Clarke, Sloane, Cheung, and Silber (2003) explored whether baccalaureate or higher nursing education was associated with patient mortality and failure to rescue. Results of the study indicated that a 10% increase in the proportion of nurses with baccalaureate education resulted in a 5% decrease in 30 day mortality and odds of failure to rescue. Although this study included in this sample only nurses in the state of Pennsylvania, which limits its applicability to the greater population, Magnet hospitals

place great emphasis on continuing education of the nursing workforce, and it has been noted to increase quality of care provided by nurses.

The concept of adequate staffing in hospitals has been studied by a number of researchers in relationship to its impact on patient and nurse outcomes. Aiken, Clarke, Sloane, Sochalski, and Silber (2002) determined, after adjusting for hospital and nursing characteristics, that hospitals with high patient-to-nurse ratios experienced significant nurse burnout, emotional exhaustion and job dissatisfaction. Laschinger, Shamian, and Thomson (2001) further noted burnout, work satisfaction, and a nurse's perception of quality of care influences work environment and a positive feeling related to the work that nurses perform.

Some studies have shown mixed results on the impact of nurse staffing with patient outcomes. Blegen, Goode, and Reed (1998) and Cho, Ketefian, Barkauskas, and Smith (2003) determined that increasing the number of nursing hours increased the incidence of decubitus ulcers, while Blegen and Vaughn (1998) found higher registered nurse proportion was associated with lower decubiti rates. Bolton et al. (2003) linked higher levels of patient satisfaction with nurse-staffing levels, higher proportions of registered nurse (RN) skill-mix, nurses' work environment, and RN-physician collaboration.

In contrast to others studies, Goode et al., (2011) showed mixed outcomes as it related to Magnet versus non-Magnet hospitals. Using a bivariate and multivariate analyses, a comparison of patient outcomes and nurse staffing in general units and ICUs of Manget and non-Magnet hospitals was studied. The findings reflected non-Magnet hospitals had better patient outcomes in the areas of infections, postoperative sepsis, and

postoperative metabolic derangement; only pressure ulcers reflected better outcomes in the Magnet hospital group. These results were reflective even though the non-Magnet group had lower staffing numbers and lower RN sill mix compared with non-Magnet hospitals. The researchers noted that the findings were limited by the small sample of Magnet hospitals and by the sample composition of teaching hospitals only.

Patient Satisfaction

Patient satisfaction with nursing care has been found to be an indicator of quality with the overall health care experience (Vahey, Aiken, Sloane, Clarke, & Vargas, 2004). A number of researchers in this area have reported that in addition to clinical outcomes, patient satisfaction is also a major outcome of care (Hudak, McKeever, & Wright, 2004; Tomlinson & Ko, 2006).

Blegen et al. (1998) found a correlation between hours of care, increased patient complaints, and increased patient acuity. In a related study that measured patient satisfaction, Blegen and Vaughn (1998) determined that a relationship existed between the total number of RN care hours and the number of patient complaints after controlling for patient acuity. This research was supported by the work of Sovie and Jawad (2001), who examined the effect of hospital restructuring on patient outcomes, specifically related to pain management. In an examination of patient satisfaction and other outcomes data, in a total of 29 university hospitals, their study demonstrated that an increase in the number of RN hours worked per patient day was associated with an increase in the satisfaction level of patients regarding how well their pain was managed.

Bolton et al. (2003) linked higher levels of patient satisfaction with nurse-staffing levels, higher proportions of RN skill-mix, nurses' work environment, and RN-physician

collaboration. The researchers examined the relationship between nurse staffing and patient perceptions of nursing care in a convenience sample of 40 California hospitals. Nurse staffing and patient perceptions of nursing care from hospitals which submitted data in both the ongoing California Nursing Outcomes Coalition statewide database project and the statewide Patients Evaluation of Performance in California project were analyzed. The results showed that hospitals with wide ranges of staffing levels had similar results in patient perceptions of nursing care. Regression analysis revealed a statistically significant relationship between nursing hours per patient day and one of the six dimensions of care measured (respect for patient's values, preferences, and expressed needs).

Aiken, Sloane, Lake, Sochalski, and Weber (1999) compared the 30-day mortality rate and satisfaction with care in 40 dedicated AIDS units, some of which were in Magnet designated hospitals. They found there was a lower risk for dying within 30 days of admission and higher patient satisfaction. On nursing units where the environments were positive, patients were more than twice as likely to be highly satisfied with their nursing care as patients in units with less desirable work setting (Aiken et al., 1999).

Beginning in October 2012, hospitals were paid for inpatient acute care based on quality of care, not just quantity of services they provided. This program, known as the Hospital Value-Based Purchasing Program, is designed to promote better clinical outcomes for hospital patients, as well as to improve their experience of care during hospital stays (Centers for Medicare and Medicaid Services [CMS], 2012). To avoid a 2% reduction in payment, hospitals must participate in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. The incorporation

of the HCAHPS survey into the IPPS, pay-for-performance plans, and quality-monitoring systems has ensured that measuring and reporting patient satisfaction is an important part of value-based health care (Kutney-Lee et al., 2009)

Kutney-Lee et al. (2009) examined the relationship between nursing and patient satisfaction across 430 hospitals. The study included all acute care hospitals in California, Pennsylvania, New Jersey, and Florida that reported HCAHPS data to CMS. Ordinary least squares regression models were used to determine the effect of the nurse work environment on each HCAHPS outcome, before and after adjusting for unmeasured differences across the four states using dummy variables, as well as for hospital characteristics (size, teaching status, ownership, and a CBSA and response rate. The researchers found the nurse work environment was significantly related to all HCAHPS patient satisfaction measures. In addition, it was noted that patient-to- nurse workloads were significantly associated with patients' ratings and recommendations of the hospital to others, and with their satisfaction with the receipt of discharge information. Nurses working in poor environments cared for an average of 5.3 patients, while nurses in the better environments cared for an average workload of 4.6 patients. The most notable difference involved the percentage of patients who would definitely recommend the hospital. On this global measure, there was a 10 percentage point difference in the mean percentage of patients who would definitely recommend the hospital. The researchers concluded that improving nurse work environments in hospitals could result in improved patient outcomes, including better patient experiences.

Jha, Orav, Zheng, and Epstein (2008) studied whether key characteristics of hospitals that are thought to enhance patients' experiences (i.e. a high ratio of nurses to

patient-days, for-profit status, and nonacademic status) were associated with a better experience for patients. They examined whether a hospital's performance on the HCAHPS survey was related to its performance on indicators of the quality of clinical care. The findings suggested that there were moderately high levels of satisfaction with care (e.g., 63.5% versus 70.2% of a hospital's patients said that they would definitely recommend the hospital), with a high degree of correlation among the measures of patients' experiences. Hospitals with a high level of patient satisfaction provided clinical care that was somewhat higher in quality for all conditions examined.

Bacon and Mark (2009) examined the relationship between hospital context, nursing unit structure, and patient characteristics and patient satisfaction with nursing care in hospitals. In this study, the researchers found that greater availability of nursing unit support services and higher levels of work engagement were associated with higher levels of patient satisfaction.

Donahue, Piazza, Griffin, Dykes, and Fitzpatrick (2008) explored the relationship between nurses' perceptions of empowerment and patient satisfaction. Significant relationships were found between nurses' perceptions of empowerment and access to information, opportunity, support, and resources. A significant positive correlation was found between nurses' perceptions of empowerment and patient satisfaction (r=.052; p<.05).

In another study, Schmalenberg and Kramer (2008) conducted a secondary analysis of aggregated data from 10,514 staff nurses in 34 hospitals which completed the Essential of Magnetism (EOM) tool. The results reflected that nurses in Magnet hospitals reported the most productive work environment; higher level of education prepared

nurses reported the most favorable environments; and the most experienced report the most satisfying productive environments; and clinical units in medical surgical and surgical specialty and outpatient units report the healthiest work environments.

Hospital Consumer Assessment of Healthcare Providers and Systems

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey consists of 27 items. Of those items, there are 18 substantive items which include 14 report items used to construct six composite measures of two to three items each (communication with nurses, communication with doctors, responsiveness of hospital staff, pain management, communication about medicines, and discharge information), two individual items (cleanliness of hospital environment and quietness of the hospital environment), and two global ratings (overall willingness to recommend the hospital), (CMS, 2011; Giordano, Elliott, Goldstein, Lehrman, & Spencer, 2010).

The HCAHPS survey is publically reported and managed by CMS. The results are reported out on a quarterly basis on the Consumer Assessment of Healthcare Providers and Systems (CAHPS) website. According to CMS, the goal of this public report is to assist consumers in making informed decisions regarding choices they make for health care services. In addition, it serves as a mechanism to monitor quality of care (Elliott et al., 2010; U.S. Department of Health and Human Services, 2011).

Summary

The literature review confirms that Magnet designated hospitals consistently reflect evidence of work cultures that promote excellence in patient care through the development of supportive work environments. It has been consistently noted that these work environments have sustained the original purpose of the Magnet program – to

recruit and retain nurses in hospitals. Only in recent years has there been a shift to evaluating whether or not the practices in place in Magnet hospitals are making a difference in the outcomes for patients. The limitations with many of these studies so far is that they have been primarily based on subjective data collection, most soliciting the feedback from nurses on their perception of the quality of care they are providing. Since refocusing the Magnet program to include the impact of the Magnet hospital on patient outcomes, a few studies have emerged that have linked characteristics of the Magnet hospital, such as higher levels of education and training of nurses, good physician-nurse relationships and nurse autonomy over practice, to decreased mortality, decreased falls, and decreased pressure ulcers in some cases.

The literature to this point is very scarce in terms of the impact of the Magnet hospital designation on the patient experience. A few studies have stressed the importance of nursing on overall patient satisfaction, but it is unclear if the Magnet hospital patient experience is significantly better than those of their non-Magnet counterparts. It is important for health care leaders to understand if the considerable time and resources required for a hospital to become Magnet designated is contributing to a better patient experience. Given that nursing is the largest group of clinical staff in hospitals to interact with patients, it seems logical that the impact on the patient's experience is equally as great. To understand the impact of the very supportive Magnet environment on the patient experience could have far reaching implications in the Value Based Purchasing era in health care, where the satisfaction of patients not only contributes to the patients well-being, but also to the financial viability of the hospital. This study will include analysis of a large data set, including hospitals across the U.S., in

comparison to the few studies currently in the literature, which have focused on a limited number of hospitals in a only a few states or regions of the country.

CHAPTER III: METHODS

Study Design

A retrospective cross-sectional approach was used in the analysis. Retrospective studies of this type have as a primary goal to assess a sample at one specific point in time by looking at data which have already been collected without making inferences or causal statements. This type design is foundational to obtain preliminary measures of association to develop future studies. To examine the relationship between Magnet designation and patient satisfaction, independent *t* tests were used to examine the univariate relationship between Magnet designation and each of the ten satisfaction survey indicators. Next, a multivariate analysis was conducted of the ten patient satisfaction survey indicators on Magnet designation while controlling for organization variables. A multiple linear regression model was generated to determine whether the hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status would significantly serve as predictors for the dependent variables of the 10 measures of patient satisfaction intention. In both instances, the controls were based on hospital bed size, teaching status, ownership, and system affiliation. This equation reflects the model: *Patient satisfaction=f(Magnet status+bed size=ownership+teaching status+system affiliation).* A $p<.05$ were considered significant in evaluating the results of the analysis.

Description of Data

The data used in the study are from three secondary data sources, which include the American Nurses Credentialing Center (ANCC) (2008), the American Hospital Association (AHA) (2012), and Hospital Compare HCAHPS Survey Data (Centers for Medicare and Medicaid, n.d.).

American Nursing Credentialing Center (ANCC)

Magnet designated hospitals from across the U.S. were identified in the ANCC Magnet database. Only hospitals who successfully received Magnet designation by the end of the calendar year 2011 were included in this category of the study. The ANCC is the largest credentialing center, a subsidiary of the American Nurses Association, which is responsible for awarding Magnet designation, and controls and manages the ANCC database. Those hospitals awarded Magnet designation are placed in the database, along with designation year and contact information (American Nurses Credentialing Center, 2008).

American Hospital Association (AHA)

The AHA collects data in an annual survey of hospitals, which contains hospital-specific data on more than 5,000 hospitals and 450 health care systems, including more than 700 data fields covering organization structure, personnel, hospital facilities, services, and financial information (American Hospital Association, 2012). Data obtained from the AHA database for this study includes information about general acute care hospitals in the U.S. on staffed hospital bed size, hospital teaching status, hospital control/ownership, and system affiliation status. Those hospitals that failed to submit AHA data and/or submitted incomplete information on their surveys were excluded from

the sample, as they were unable to be compared on all variables as was the case with the other hospitals.

Hospital Compare HCAHPS Data

The HCAHPS survey is a national database which is standardized to capture patient's hospital experiences in short-term, acute care hospitals. The data are publically available on the Hospital Compare Web site sponsored by the CMS and the Hospital Quality Alliance (HQA). The twenty-seven item survey is reported as a set of ten measures of patient satisfaction (six summary measures, two single items, and two global ratings), which include communication with nurses and doctors, responsibilities of hospital staff, pain management, communication about medicines, discharge information, cleanliness and quietness of the hospital environment, overall rating of the hospital, and willingness to recommend the hospital to friends and family. For the purposes of this study, hospitals were excluded from the sample where the number of patient responses to the survey was less than 100 for those hospitals and the Hospital Compare site makes notations to the fact that results from those hospitals should be used with caution as the sample size may be too small to adequately assess the performance of the hospital. Five hospitals were excluded because their data submission was less than a full 12 months during 2011.

Validity of Data

Data within administrative databases are considered complete, because hospitals are required to submit their data by either laws or statutes as a condition of reimbursement, condition of participation in third party group monitoring quality for public access, and often is a condition of group membership in organizations like the

American Hospital Association. Administrative databases are important for the purpose of health care research. They are readily available, comprehensive, often reasonably priced to analyze, and can be used to assess quality with limited quality insight (Billings, 2003; Iezonni, 1997).

According to CMS (2011), to ensure that differences in HCAHPS results reflect differences in hospital quality only, HCAHPS survey results are adjusted for patient-mix and mode of data collection. Only the adjusted results are publicly reported and considered the official results. Several questions on the survey, as well as items from hospital administrative data, are used for patient-mix adjustment.

The primary assumption of this study is that the existing data from ANCC, AHA, and the Hospital Compare data sources are complete and accurate for patient and organizational characteristics. The AHRQ and AHA conduct extensive quality checks on data and confirm data values are valid and internally consistent based on established standards (AHRQ, 2008).

Sample

The study variables are summarized in Table 2. For the purposes of this study the identification of hospitals for review will be based on inclusion and exclusion criteria. The criteria are as follows:

Magnet and Non-Magnet Designated Hospitals

Hospitals designated as Magnet by the ANCC outside the U.S. were excluded from the data, as only U.S. hospitals report HCAHPS data. Pediatric and other specialty hospitals were excluded from the sample, as these hospitals are not required to report HCAHPS data and would not be applicable in the analysis of the data. Those hospitals

that received Magnet designation after December 2011 were excluded from the study, as the Hospital Compare HCAHPS data and the AHA organization data variables being analyzed are for the most recent completed data collection year, which is 2011.

Organizational Variables

Magnet designation. Magnet designation is an award provided by the American Nurses Credentialing Center (ANCC) to those hospitals that demonstrate achievement of specific organization criteria. In this study, a Magnet hospital is one which was designated by the ANCC and listed as being designated as of December 31, 2011.

Staffed bed size. The number of reported hospital staffed beds is the size of the hospital. This variable was obtained from the AHA database and is traditionally used in many research studies. It includes active beds, which reflects the number of beds that are set up and staffed.

Teaching/non-teaching. Teaching status is designated whether or not medical students and/or a medical residency program are located within the hospital. For the purposes of this study, those hospitals that were noted as being a member of the Council of Teaching Hospitals of the Association of American Medical Colleges or a member of the Accreditation Council for Medical Education are considered as being a teaching hospital.

System/non-system affiliate. This measure refers to whether the hospital is part of a formal system or functions independently and not as an affiliate of another organization.

Ownership/control. Hospital ownership refers to the operating structure of the hospital. The AHA has established the ownership/control to include government, non-

federal state, county, city-county, hospital district/authority; non-government, not-for-profit church owned; non-government, not-for-profit, other; and investor owned, for-profit. For the purpose of this study, we have categorized ownership to three variables, including not-for-profit, for-profit, and public.

Outcome Variable

Patient outcome. The outcome for the patient is noted as the end result of the intervention directed at the patient. For the purpose of the study, the outcome is the level of satisfactions for patients as reported by them after their hospital stay. In the case of the HCAHPS survey, the outcome variables include how satisfied were patients with eight specific measures related to the patient experience and two global measures. The eight specific measure are as following: (a) percent of patients who reported that their nurses "always" communicated well; (b) percent of patients who reported that their doctors "always" communicated well; (c) percent of patients who reported that they "always" received help as soon as they wanted it; (d) percent of patients who reported that their pain was "always" well controlled; (e) percent of patients who reported that staff "always" explained medicine before giving it to them; (f) percent of patients who reported that their room and bathroom were "always" clean; (g) percent of patients who reported that the area around their room was "always" quiet at night; (h) percent of patients who reported that yes, they were given information about what to do during recovery; and the two global measures, (i) patients who gave their hospital a rating of 9 or 10 overall on a scale from 0 (lowest) to 10 (highest); and (j) patients who report yes, they would definitely recommend the hospital. These are summarized in Table 2. The highest level satisfaction category on the HCAHPS survey is the percent of patients that

gave an "always" rating on a specific satisfaction measure. It is the percent of these patients in the hospitals included in the study that reported "always" for each of the eight specific measures for comparative analysis. The two global measures on the HCAHPS survey expected to be associated with Magnet designation is "patients who gave a rating of 9 or 10," which is the highest level rating for this item, and the patients that indicated "yes, they would definitely recommend the hospital" based on their feedback to the survey after discharge.

Table 2

Study Variables for 2011

Construct	Measure	Type	Source
Patient satisfaction	Patients reported nurses always communicated well	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who reported that their doctors always communicated well	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who reported that they always received help as soon as they wanted	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who reported that their pain was always controlled	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who reported that staff always explained about medicines before giving to them	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who reported that their room and bathroom were always clean	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who reported that the area around their room was always quiet at night	Continuous	HCAHPS/ AHRQ

Table 2 (cont.)

Construct	Measure	Type	Source
Patient satisfaction	Patients at each hospital who reported that they were given information about what to do during recovery	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients who would rate hospital 9 or 10	Continuous	HCAHPS/ AHRQ
Patient satisfaction	Patients would definitely recommend hospital	Continuous	HCAHPS/ AHRQ
Magnet status	Hospital Designated as Magnet	Dichotomous	ANCC
Size	Hospital Bed Size	Continuous	AHA
System Affiliation	System/Non-System Affiliate	Dichotomous	AHA
Ownership	Profit/Non-profit/Government	Dichotomous	AHA
Teaching	Teaching/Non-teaching	Dichotomous	AHA

Data Analysis

The data sets from Hospital Compare, AHA, and ANCC were merged using the Medicare identification number. In the analysis, the measures on the Hospital Compare data set related to patient satisfaction primarily with nursing services in how well nurses communicated, were patients receiving help as soon as they wanted, was their pain always controlled, were medicines explained before giving, and did they receive instructions about recovery at home. These were expected to have a significant impact in the Magnet hospital group, while the other two specific items could be addressed by other disciplines and may have lesser impact, as others in the organization were likely to have a greater influence and impact. Table 3 reflects which variables were expected to be significantly impacted by Magnet status. Each of the hospitals included in the study were compared to determine the percentage of patients reporting the highest level of

satisfaction for that survey item, e.g. the patients reporting that "nurses always communicated well." This is also consistent with how CMS reports out on the quarterly rankings of hospitals across the United States, only the top positive rating is included for comparative purposes. The nursing measures were expected to be correlated with hospitals designated as Magnet to having the highest level of satisfaction with these measures, and also the two global measures of "rating the hospital 9 or 10" and those patients that would "definitely recommend hospital."

The HCAHPS data used in the study covered the publically available reporting period from January 2011 to December 2011. This was the most up-to-date information available on the Hospital Compare site at the time of the study that had been publically reported for a full 12-month period and was matched to the same period for the complete data set available by AHA for 2011.

The analysis included using 10 separate multiple regression models, with one model for each of the HCAHPS patient satisfaction measures. These models served the purpose of determining whether the hospital characteristics of Magnet status, hospital bed size, ownership, system affiliation, and teaching status would significantly serve as predictors of the dependent variables of the 10 measures of patient satisfaction. The analysis was conducted using SPSS. A *p*-value of less than .05 was considered significant and indicates a significant relationship between Magnet status on any of the measures.

Based on a review of the literature and the elements that have been identified as common characteristics in Magnet hospitals, a prediction was made as to the relationship between Magnet status and patient satisfaction. The Magnet hospital organization provides a framework for excellence in patient care. This is achieved through support for

nursing in the way of resource allocation, such as lower nurse to patient rations, autonomy of nursing practice, nurse control over practice, and positive nurse-physician relationships. Innovation is encouraged in terms of nurses having input into changes that occur in the organization. This type of support for nurses facilitates the nurse's ability to focus on the needs of patients in providing care, which ultimately should contribute to better outcomes for patients in the way of their satisfaction.

Of the ten satisfaction measures on the HCAHPS survey, seven of the items can be associated with processes reflective of the Magnet status environment. Three of the items do not appear to have a direct link to Magnet status and were not expected to be impacted.

Table 3 provides a summary list of the 10 patient satisfaction measures and the expected impact that Magnet status has on the level of satisfaction of patients for each of the indicators. A review of the satisfaction items being measured and rationale for expected impact of Magnet status is listed below.

Of the three patient satisfaction measures on the HCAHPS survey, "doctors always communicated well," "room was always clean at night," and "area around room was always quiet at night," there is no linkage to the focus of the Magnet designation criteria; therefore, it is not expected that the responses to these items would show differences between the Magnet and non-Magnet status hospitals. These are also measures that would not be considered as nursing-sensitive, as defined by Maas, Johnson and Moorhead (1996) – An individual, family, or community state, behavior or perception that is measured along a continuum in response to a nursing intervention.

Two of the three measures not expected to be influenced by Magnet status have to do with factors of the hospital facilities and related environment. The measure related to "room was always clean" is dependent on services that are likely to vary greatly among individuals as far as expectation and not impacted by Magnet status. In the case of the "area around patient room being quiet at night," hospital settings are by the nature of their business very busy places and the sources of noise control would be very challenging for any organization. Patient medical conditions require ongoing monitoring, and various functions and activities continue even during the night time hours. The one item related to "doctors always communicated well" is in reference to a specific clinical discipline. It would not be expected that patients in Magnet hospitals would perceive communication to be better in this setting over others, as physicians, in general, practice self-governance, and Magnet designation does not focus on improving the communication of physicians or delivery of care specifically, but rather on the nursing aspects.

Five of the seven satisfaction measures on the HCACPS survey are expected to be correlated with Magnet status. The items, "nurses always communicated well," "patients always received help as soon as they wanted," "pain was always well controlled," "staff always explained about medicines before giving them to patients," and "staff always gave patients information about what to do during their recovery at home." Because the Magnet hospital environment places great emphasis on the creation of the best conditions for nurses to practice, it was expected that these activities, which are mostly managed by nurses, would support high levels of satisfaction for patients. Because Magnet hospitals are known for having higher proportions of registered nurse skill-mix and lower nurse-to-patient ratios, which has been linked to higher levels of patient satisfaction (Bolton et al.,

2003), they are likely to be better skilled at addressing patients' needs and have more time to spend with patients to communicate with them, answer questions, explain treatments, and responding to patient requests for help in a timely manner. Part of the ANCC evaluation metrics require that Magnet hospitals monitor patient satisfaction and address opportunities to continually improve. It would be expected there would be ongoing monitoring and changes made to address the needs of patients, as Magnet nursing environments are noted for allowing nurses to be innovative and autonomous in carrying out their practice duties (Kramer & Schmalenberg, 1991).

Two of the seven satisfaction measures on the HCAHPS survey are expected to have correlation to Magnet status are global in nature. They are "patients who gave a rating of 9 or 10 (highest level)" and "yes, patients would definitely recommend the hospital." These items reflect the perception of the overall experience for the patient while hospitalized. Given that nurses are the staff with whom patients interact the most during their hospital stay and for the longest periods of time, it was expected that nurses would have a substantial impact on how patients would rate their experience, overall. Several studies have shown that patient's satisfaction with their nursing care experience has the greatest impact on patient satisfaction, overall (Atkins et al., 1996).

Table 3

HCAHPS Survey Variables

Survey Variables	Expected Magnet Impact
Nurses always communicated well	Yes
Doctors always communicated well	No
Patients always received help as soon as they wanted	Yes
Pain was always well controlled	Yes
Staff always explained about medicines before giving them to patients	Yes
Room was always clean	No
Area around patient room was always quiet at night	No
Staff always gave patients information about what to do during their recovery at home	Yes
Patients who gave a rating of 9 or 10 (high)	Yes
Yes, patients would definitely recommend the hospital	Yes

Limitations of the Study

Because the approach to the study is cross-sectional versus longitudinal, it is possible to make associational and not causal inferences about the relationship between patient satisfaction and Magnet designation. Another limitation is the recognition that hospitals are very complex organizations, and factors not accounted for in the study could influence patient satisfaction.

The primary measures for this study were limited to the 8 specific measures of the patient experience and the 2 global measures of whether patients would "rate the hospital a 9 or 10" and would they "definitely recommend the hospital." Magnet designation may have impact on other measures of the HCAHPS survey that are being planned for roll out by CMS at a later time and provide additional opportunities for future study.

Institutional Review Board Approval

In order to assure that proper steps are taken in research to protect the rights and welfare of human subjects, the Institutional Review Board (IRB) under the United States Food and Drug Administration (FDA) has authority to review and monitor compliance with related standards. The research proposal was submitted to the Medical University of South Carolina Institutional Review Board for review and approval. Data sources for the study were identified, but not purchased and analyzed until approval by the IRB was received. The study was deemed to not be human research by the MUSC IRB and, therefore, no further oversight was required and the study was approved to move forward.

CHAPTER IV: RESULTS

Description of Sample

Description of the Hospital Information

The total number of the sample consisted of 3,539 hospital data. The breakdown of the characteristics of the sample is summarized in Table 4. These include the categorically measured independent variables of not-for-profit, for-profit, public, Magnet hospital, system-affiliated, and teaching characteristics of hospitals. A majority of the hospitals were not-for-profit hospitals which consisted of 2,822 (79.7%). Also, most were non-public hospitals, which consisted of 2,970 (83.9%). A majority of the hospitals were not Magnet hospitals (91.8%), wherein there were only 289 (8.2%) that were Magnet hospitals. Many of the hospitals, which consisted of 2,254 (63.7%) out of the 3,539 hospitals, were system-affiliated. Lastly, most of the hospitals were non-teaching hospitals (71%); there were only 1,028 (29%) out of the 3,539 hospitals that were teaching.

Table 4

Frequencies and Percentages Breakdown of Respondents' Demographic Characteristics

	Frequency	Percent
Not For-profit		
No	1,286	36.3
Yes	2,253	63.7
For-profit		
No	2,822	79.7
Yes	717	20.3
Public		
No	2,970	83.9
Yes	569	16.1
Magnet Hospital		
No	3,250	91.8
Yes	289	8.2
System-affiliated		
No	1,285	36.3
Yes	2,254	63.7
Teaching		
No	2,511	71.0
Yes	1,028	29.0

Descriptive Statistics of Study Variables

The descriptive statistics of the independent variable of the number of staffed beds in the hospital and the dependent variable of the 10 satisfaction measures of the patients are presented in this section. The 10 satisfaction measures include the following: (a) percent of patients who reported that their nurses "Always" communicated well, (b) percent of patients who reported that their doctors "Always" communicated well, (c) percent of patients who reported that they "Always" received help as soon as they wanted it, (d) percent of patients who reported that their pain was "Always" well controlled, (e) percent of patients who reported that staff "Always" explained medicine before giving it to them, (f) percent of patients who reported that their room and bathroom were "Always"

clean, (g) percent of patients who reported that the area around their room was "Always" quiet at night, (h) percent of patients at each hospital who reported that yes, they were given information about what to do during recovery, (i) patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest), and (j) patients who reported yes, they would definitely recommend the hospital. The descriptive statistics included the statistics of mean and standard deviation. Table 5 summarizes the descriptive statistics of the different study variables.

The statistics in Table 5 show that the mean number of staffed beds in the 3,539 hospitals was 198.45. The lowest number of staffed beds in a hospital was six, while the highest number of staffed beds was 2,264. The mean was in the lower end of the minimum and maximum range of number of hospital beds, implying that many of the hospitals had a number of staffed beds in the hundreds range. For the 10 measures of patient satisfaction, the mean responses of the 10 measures range between 58.61% and 83.24%. The top five highest mean percentages were the satisfaction measure of percent of patients at each hospital who reported that yes, they were given information about what to do during recovery (M = 80.45%), percent of patients who reported that their doctors "Always" communicated well, percent of patients who reported that their nurses "Always" communicated well (M = 80.45%), percent of patients who reported that their doctors "Always" communicated well (M = 76.87%), percent of patients who reported that their room and bathroom were "Always" clean (M = 71.65%), and patients who reported yes, they would definitely recommend the hospital (M = 69.91%). A higher score would indicate that there were many patients that were satisfied with these service areas in the hospital. These were the areas of the hospital service wherein the percentage

of patients reported the highest level of satisfaction. The five lowest mean percentages were the satisfaction measure of percent of patients who reported that the area around their room was "Always" quiet at night (M = 58.61%), percent of patients who reported that staff "Always" explained medicine before giving it to them (M = 61.60%), percent of patients who reported that they "Always" received help as soon as they wanted it (M = 64.65%), percent of patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest) (M = 68.40%), and percent of patients who reported that their pain was "Always" well controlled (M = 69.65%). For all the 10 satisfaction measures, the minimum and maximum ranges were within the possible percentage values of 0 to 100.

Table 5

Descriptive Statistics of Study Variables (n=3,539)

	Minimum	Maximum	Mean	Std. Deviation
Number of Staffed Beds	6	2,264	198.45	200.86
Percent of patients who reported that their nurses "Always" communicated well.	48	98	76.87	5.46
Percent of patients who reported that their doctors "Always" communicated well.	56	100	80.45	4.99
Percent of patients who reported that they "Always" received help as soon as they wanted.	35	96	64.65	8.38
Percent of patients who reported that their pain was "Always" well controlled.	44	98	69.65	5.03
Percent of patients who reported that staff "Always" explained medicine before giving it to them.	35	91	61.60	5.83

Table 5 (cont.)

	Minimum	Maximum	Mean	Std. Deviation
Percent of patients who reported that their room and bathroom were "Always" clean.	43	96	71.65	7.19
Percent of patients who reported that the area around their room was "Always" quiet at night.	30	93	58.61	9.89
Percent of patients at each hospital who reported that YES, they were given information about what to do during recovery.	58	99	83.24	4.45
Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest).	33	95	68.40	8.63
Patients who reported YES, they would definitely recommend the hospital.	27	99	69.91	9.63

ANOVA Results of the Relationship between Patient Satisfaction and Magnet Status of Hospital

A one-way ANOVA was conducted to determine whether or not each of the 10 patient satisfaction measures significantly differed in Magnet status of the hospitals. Specifically, it was used to determine whether patient satisfaction significantly differed between Magnet versus non-Magnet hospitals. A significant difference would mean that there is a relationship between Magnet designation and patient satisfaction. A level of significance of 0.05 was used in the statistical test, which implied that there is a statistically significant difference when the *p*-values (sig.) will be less than or equal to the level of significance value of 0.05. The ANOVA results are summarized in Table 6.

The analysis revealed there were significant differences in seven out of the 10 patient satisfaction measures between Magnet and non-Magnet hospital. The probability

values (sig.) were less than the level of significance value of 0.05, implying the significance of the statistics. These include the following:

- Percent of patients who reported that their doctors "Always" communicated well, $F(1) = 16.65$; $p = 0.00$
- Percent of patients who reported that they "Always" received help as soon as they wanted, $F(1) = 23.76$; $p = 0.00$
- Percent of patients who reported that their room and bathroom were "Always" clean, $F(1) = 22.94$; $p = 0.00$
- Percent of patients who reported that the area around their room was "Always" quiet at night, $F(1) = 43.85$; $p = 0.00$
- Percent of patients at each hospital who reported that YES, they were given information about what to do during recovery, $F(1) = 16.22$; $p = 0.00$
- Percent of patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest), $F(1) = 48.04$; $p = 0.00$
- Patients who reported YES, they would definitely recommend the hospital, $F(1) = 133.89$; $p = 0.00$

On the other hand, there were no significant differences in three out of the 10 patient satisfaction measures, specifically of the percent of patients who reported that their nurses "Always" communicated well, $F(1) = 1.15$. $p = 0.29$; percent of patients who reported that their pain was "Always" well controlled, $F(1) = 0.01$, $p = 0.93$; and percent of patients who reported that staff "Always" explained medicine before giving it to them, $F(1) = 1.68$, $p = 0.20$, between Magnet and non-Magnet hospitals. In general, the results of the ANOVA showed that there was a relationship between Magnet designation and

patient satisfaction, since there were seven patient satisfaction measures that were significantly different across the independent groups of Magnet and non-Magnet hospitals.

Table 6

ANOVA Results

		Sum of Squares	*df*	Mean Square	F	Sig.
Percent of patients who reported that their nurses "Always" communicated well.	Between Groups	34.12	1	34.12	1.15	0.29
	Within Groups	105400.39	3537	29.80		
	Total	105434.50	3538			
Percent of patients who reported that their doctors "Always" communicated well.	Between Groups	413.19	1	413.19	16.65	0.00
	Within Groups	87776.01	3537	24.82		
	Total	88189.20	3538			
Percent of patients who reported that they "Always" received help as soon as they wanted.	Between Groups	1656.08	1	1656.08	23.76	0.00
	Within Groups	246492.90	3537	69.69		
	Total	248148.98	3538			
Percent of patients who reported that their pain was "Always" well controlled.	Between Groups	0.22	1	0.22	0.01	0.93
	Within Groups	89345.52	3537	25.26		
	Total	89345.74	3538			
Percent of patients who reported that staff "Always" explained medicine before giving it to them.	Between Groups	56.99	1	56.99	1.68	0.20
	Within Groups	120337.77	3537	34.02		
	Total	120394.75	3538			
Percent of patients who reported that their room and bathroom were "Always" clean.	Between Groups	1177.07	1	1177.07	22.94	0.00
	Within Groups	181455.42	3537	51.30		
	Total	182632.49	3538			

Table 6 (cont.)

		Sum of Squares	*df*	Mean Square	F	Sig.
Percent of patients who reported that the area around their room was "Always" quiet at night.	Between Groups	4234.92	1	4234.92	43.85	0.00
	Within Groups	341581.99	3537	96.57		
	Total	345816.91	3538			
Percent of patients at each hospital who reported that YES, they were given information about what to do during recovery.	Between Groups	320.36	1	320.36	16.22	0.00
	Within Groups	69845.49	3537	19.75		
	Total	70165.85	3538			
Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest).	Between Groups	3527.04	1	3527.04	48.04	0.00
	Within Groups	259675.54	3537	73.42		
	Total	263202.59	3538			
Patients who reported YES, they would definitely recommend the hospital.	Between Groups	11957.51	1	11957.51	133.89	0.00
	Within Groups	315894.59	3537	89.31		
	Total	327852.10	3538			

*significant at level of 0.05

Multiple Linear Regression Results

A multiple linear regression model was generated to determine whether the hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status would significantly serve as predictors for the dependent variables.

Table 7 summarizes the results of the ten regression models to determine which hospital characteristics are significant predictors of the patient satisfaction measure of percent of patients who reported that their nurses "Always" communicated. The results of the model show that all the hospital characteristics of staffed hospital bed size, $t(6) =$

-15.77, $p = 0.00$; hospital not-for-profit status, $t(6) = 2.13$, $p = 0.03$; hospital for-profit status, $t(6) = -2.76$, $p = 0.01$; hospital Magnet status, $t(6) = 7.23$, $p = 0.00$; system affiliation status, $t(6) = -3.18$, $p = 0.00$; and hospital teaching status, $t(6) = -2.11$, $p = 0.04$, were significant predictors of the patient satisfaction measure of percent of patients who reported that their nurses "Always" communicated. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status were significantly related with patient satisfaction measures of the percent of patients who reported that their nurses "Always" communicated.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that their nurses "Always" communicated. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.31), hospital for-profit status (Beta = -0.06), system affiliation status (Beta = -0.05), and hospital teaching status (Beta = -0.04) were negative, implying that the percent of patients who reported that their nurses "Always" communicated was lesser for hospitals that had a higher number of staff, were not-for-profit hospitals, not system-affiliated, and were non-teaching hospitals. On the other hand, the standardized coefficient value (beta) of hospital not-for-profit status (Beta = 0.05) and hospital Magnet status (Beta = 0.12) were positive, implying that

percent of patients who reported that their nurses "Always" communicated was greater for hospitals that were not-for-profit hospitals and Magnet hospitals.

Table 7

Regression Results of Model for Percent of Patients Who Reported that their Nurses "Always" Communicated Well

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	78.67	0.24		333.59	0.00
	Staffed Beds	-0.01	0.00	-0.31	-15.77	0.00
	Not-for-profit	0.54	0.25	0.05	2.13	0.03
	For-profit	-0.85	0.31	-0.06	-2.76	0.01
	Magnet Hospital	2.47	0.34	0.12	7.23	0.00
	System-affiliated	-0.61	0.19	-0.05	-3.18	0.00
	Teaching	-0.47	0.22	-0.04	-2.11	0.04

Note. F (6, 3532) = 67.75, Sig. = 0.00, R Square (R2) = 0.10, N = 3538

a. Dependent Variable: Percent of patients who reported that their nurses "Always" communicated well.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 8 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of percent of patients who reported that their doctors "Always" communicated well. The results of the model show that all the hospital characteristics of staffed hospital bed size, $t(6) = -17.33$, $p = 0.00$; hospital not-for-profit status, $t(6) = -5.32$, $p = 0.0$; hospital for-profit status, $t(6) = -3.70$, $p = 0.00$; hospital Magnet status, $t(6) = 3.89$, $p = 0.00$; system affiliation status, $t(6) = -3.42$, $p = 0.00$; and hospital teaching status, $t(6) = -2.05$, $p = 0.04$), were significant predictors of the patient satisfaction measure of the percent of patients who reported that their doctors "Always" communicated well. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital not-

for-profit status, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status were significantly related with patient satisfaction measure of percent of patients who reported that their doctors "Always" communicated well.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of the hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that their doctors "Always" communicated well. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.33), hospital not-for-profit status (Beta = -0.13), hospital for-profit status (Beta = -0.08), system affiliation status (Beta = -0.06), and hospital teaching status (Beta = -0.04) were negative, implying that the percent of patients who reported that their doctors "Always" communicated well were lesser for hospitals that have a higher number of beds, were not-for-profit hospitals, not system-affiliated, and non-teaching hospitals. On the other hand, the standardized coefficient value (beta) of hospital Magnet status (Beta = 0.07) was positive, implying that the percent of patients who reported that their doctors "Always" communicated well was greater for hospitals that were Magnet hospitals.

Table 8

Regression Results of Model for Percent of Patients Who Reported that their Doctors "Always" Communicated Well

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	83.46	0.21		393.43	0.00
	Staffed Beds	-0.01	0.00	-0.33	-17.33	0.00
	Not-for-profit	-1.21	0.23	-0.12	-5.32	0.00
	For-profit	-1.02	0.28	-0.08	-3.70	0.00
	Magnet Hospital	1.20	0.31	0.07	3.89	0.00
	System-affiliated	-0.59	0.17	-0.06	-3.42	0.00
	Teaching	-0.41	0.20	-0.04	-2.05	0.04

Note. F (6, 3532) = 89.88, Sig. = 0.00, R Square (R2) = 0.13, N = 3538

a. Dependent Variable: Percent of patients who reported that their doctors "Always" communicated well.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 9 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the percent of patients who reported that they "Always" received help as soon as they wanted it. Results of the model show that the hospital characteristics of staffed hospital bed size, $t(6) = -22.26$, $p = 0.00$; hospital for-profit status, $t(6) = -2.13$, $p = 0.03$; hospital Magnet status, $t(6) = 4.59$, $p = 0.00$; system affiliation status, $t(6) = -5.33$, $p = 0.00$; and hospital teaching status, $t(6) = -2.80$, $p = 0.01$,were significant predictors of the percent of patients who reported that they "Always" received help as soon as they wanted it. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status were significantly related with patient satisfaction measure of the percent of patients who reported that they "Always" received help as soon as they wanted it.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that their doctors "Always" communicated well. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.41), hospital for-profit status (Beta = -0.05), system affiliation status (Beta = -0.09), and hospital teaching status (Beta = -0.05) was negative, implying that the percent of patients who reported that they "Always" received help as soon as they wanted it was lesser for hospitals that have a higher number of staff, were not-for-profit hospitals, not system-affiliated, and non-teaching hospitals. On the other hand, the standardized coefficient value (beta) of hospital Magnet status (Beta = 0.08) was positive, implying that the percent of patients who reported that they "Always" received help as soon as they wanted it was greater for hospitals that were Magnet hospitals.

Table 9

Regression Results of Model for Percent of Patients Who Reported that they "Always" Received Help as Soon as They Wanted It

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	69.39	0.34		201.59	0.00
	Staffed Beds	-0.02	0.00	-0.41	-22.26	0.00
	Not-for-profit	-0.19	0.37	-0.01	-0.51	0.61
	For-profit	-0.95	0.45	-0.05	-2.13	0.03
	Magnet Hospital	2.29	0.50	0.08	4.59	0.00
	System-affiliated	-1.49	0.28	-0.09	-5.33	0.00
	Teaching	-0.92	0.33	-0.05	-2.80	0.01

Note. F (6, 3532) = 136.49, Sig. = 0.00, R Square (R2) = 0.18, N = 3538
a. Dependent Variable: Percent of patients who reported that they "Always" received help as soon as they wanted.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 10 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the percent of patients who reported that their pain was "Always" well controlled. The results of the model show that only the hospital characteristics of staffed hospital bed size, $t(6) = -13.19$, $p = 0.00$; and hospital Magnet status, $t(6) = 5.82$, $p = 0.00$, were significant predictors of the patient satisfaction measure of the percent of patients who reported that their pain was "Always" well controlled. They were significant predictors because the *p*-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size and hospital Magnet status were significantly related with patient satisfaction measure of the percent of patients who reported that their pain was "Always" well controlled.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size and hospital Magnet status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that their pain was "Always" well controlled. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.26) was negative, implying that the percent of patients who reported that their pain was "Always" well controlled was lesser for hospitals that have a higher number of staff. On the other hand, the standardized coefficient value (beta) of hospital Magnet status (Beta = 0.10) was positive, implying that the percent of patients who reported that their pain was "Always" well controlled was greater for hospitals that were Magnet hospitals.

Table 10

Regression Results of Model for Percent of Patients Who Reported that their Pain was "Always" Well Controlled

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	71.00	0.22		320.74	0.00
	Staffed Beds	-0.01	0.00	-0.26	-13.19	0.00
	Not-for-profit	-0.03	0.24	0.00	-0.11	0.91
	For-profit	-0.02	0.29	0.00	-0.06	0.96
	Magnet Hospital	1.87	0.32	0.10	5.82	0.00
	System-affiliated	-0.14	0.18	-0.01	-0.77	0.44
	Teaching	-0.33	0.21	-0.03	-1.57	0.12

Note. F (6, 3532) = 42.67, Sig. = 0.00, R Square (R2) = 0.07, N = 3538

a. Dependent Variable: Percent of patients who reported that their pain was "Always" well controlled.

b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 11 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the

percent of patients who reported that staff "Always" explained medicine before giving it to them. The results of the model show that the hospital characteristics of staffed hospital bed size, $t(6) = -16.23$, $p = 0.00$; hospital for-profit status, $t(6) = -2.92$, $p = 0.00$; hospital Magnet status, $t(6) = 5.39$, $p = 0.00$; and system affiliation status, $t(6) = -2.64$, $p = 0.01$, were significant predictors of the patient satisfaction measure of the percent of patients who reported that staff "Always" explained medicine before giving it to them. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital for-profit status, hospital Magnet status, and system affiliation status were significantly related with the percent of patients who reported that staff "Always" explained medicine before giving it to them.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital for-profit status, hospital Magnet status, and system affiliation status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that staff "Always" explained medicine before giving it to them. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.32), hospital for-profit status (Beta = -0.07), and system affiliation status (Beta = -0.01) was negative, implying that the percent of patients who reported that staff "Always" explained medicine before giving it to them was lesser for hospitals that have a higher number of staff, were not-for-profit hospitals, and not system-affiliated. On the other hand, the standardized coefficient value (beta) of hospital Magnet status (Beta = 0.09) was positive, implying that the percent of patients who

reported that staff "Always" explained medicine before giving it to them was greater for hospitals that were Magnet hospitals.

Table 11

Regression Results of Model for Percent of Patients Who Reported that Staff "Always" Explained Medicine before Giving it to Them

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	64.16	0.25		253.93	0.00
	Staffed Beds	-0.01	0.00	-0.32	-16.23	0.00
	Not-for-profit	-0.49	0.27	-0.04	-1.82	0.07
	For-profit	-0.96	0.33	-0.07	-2.92	0.00
	Magnet Hospital	1.98	0.37	0.09	5.39	0.00
	System-affiliated	-0.54	0.21	-0.05	-2.64	0.01
	Teaching	-0.18	0.24	-0.01	-0.75	0.46

Note. F (6, 3532) = 64.39, Sig. = 0.00, R Square (R2) = 0.10, N = 3538
a. Dependent Variable: Percent of patients who reported that staff "Always" explained medicine before giving it to them.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 12 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the percent of patients who reported that their room and bathroom were "Always" clean. The results of the model show that the hospital characteristics of staffed hospital bed size, $t(6) = -22.28$, $p = 0.00$; hospital not-for-profit status, $t(6) = 3.96$, $p = 0.00$; hospital Magnet status, $t(6) = 3.92$, $p = 0.00$; system affiliation status, $t(6) = -6.34$, $p = 0.00$; and hospital teacher status, $t(6) = -2.41$, $p = 0.02$, were significant predictors of the patient satisfaction measure of the percent of patients who reported that their room and bathroom were "Always" clean. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of

staffed hospital bed size, hospital not-for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status were significantly related with the percent of patients who reported that their room and bathroom were "Always" clean.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital Magnet status, system affiliation status, and teaching status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that their room and bathroom were "Always" clean. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.41), system affiliation status (Beta = -0.10), and teaching status (Beta = -0.04) was negative, implying that the percent of patients who reported that their room and bathroom were "Always" clean was lesser for hospitals that have a higher number of staff, are not system-affiliated, and are non-teaching hospitals. On the other hand, the standardized coefficient value (beta) of not-for-profit status (beta = 0.08) and hospital Magnet status (Beta = 0.06) was positive, implying that the percent of patients who reported that their room and bathroom were "Always" clean was greater for hospitals that were not-for-profit and Magnet hospitals.

Table 12

Regression Results of Model for Percent of Patients Who Reported that their Room and Bathroom Were "Always" Clean

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	74.92	0.30		253.99	0.00
	Staffed Beds	-0.02	0.00	-0.41	-22.28	0.00
	Not-for-profit	1.26	0.32	0.08	3.96	0.00
	For-profit	-0.64	0.38	-0.04	-1.66	0.10
	Magnet Hospital	1.67	0.43	0.06	3.92	0.00
	System-affiliated	-1.52	0.24	-0.10	-6.34	0.00
	Teaching	-0.67	0.28	-0.04	-2.41	0.02

Note. F (6, 3532) = 138.21, Sig. = 0.00, R Square (R2) = 0.19, N = 3538
a. Dependent Variable: Percent of patients who reported that their room and bathroom were "Always" clean.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 13 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the percent of patients who reported that the area around their room was "Always" quiet at night. The results of the model showed that the hospital characteristics of staffed hospital bed size, $t(6) = -12.49$, $p = 0.00$; hospital not-for-profit status, $t(6) = -6.52$, $p = 0.00$; hospital for-profit status, $t(6) = 4.76$, $p = 0.00$; and hospital teaching status, $t(6) = -4.18$, $p = 0.00$, were significant predictors of the patient satisfaction measure of the percent of patients who reported that the area around their room was "Always" quiet at night. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, and hospital teaching status were significantly related with patient satisfaction measure of the percent of patients who reported that the area around their room was "Always" quiet at night.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital for-profit status, and hospital teaching status in predicting the dependent variable of patient satisfaction measure of the percent of patients who reported that the area around their room was "Always" quiet at night. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.24), hospital not-for-profit status (Beta = -0.14), and hospital teaching status (Beta = -0.08) was negative, implying that the percent of patients who reported that the area around their room was "Always" quiet at night was lesser for hospitals that have a higher number of staff, for-profit hospitals, and for non-teaching hospitals. On the other hand, the standardized coefficient value (beta) of hospital for-profit status (Beta = 0.11) was positive, implying that the percent of patients who reported that the area around their room was "Always" quiet at night was greater for hospitals that were for-profit.

Table 13

Regression Results of Model for Percent of Patients Who Reported that the Area around their Room Was "Always" Quiet at Night

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	62.92	0.42		151.12	0.00
	Staffed Beds	-0.01	0.00	-0.24	-12.49	0.00
	Not-for-profit	-2.92	0.45	-0.14	-6.52	0.00
	For-profit	2.58	0.54	0.11	4.76	0.00
	Magnet Hospital	0.84	0.60	0.02	1.39	0.17
	System-affiliated	-0.41	0.34	-0.02	-1.20	0.23
	Teaching	-1.65	0.40	-0.08	-4.18	0.00

Note. F (6, 3532) = 102.16, Sig. = 0.00, R Square (R2) = 0.15, N = 3538
a. Dependent Variable: Percent of patients who reported that the area around their room was "Always" quiet at night.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 14 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the percent of patients at each hospital who reported that YES, they were given information about what to do during recovery. Results of the model show that the hospital characteristics of staffed hospital bed size, $t(6) = -10.05$, $p = 0.00$; hospital not-for-profit status, $t(6) = 4{,}41$, $p = 0.00$; hospital Magnet status, $t(6) = 6.30$, $p = 0.00$; system affiliation status, $t(6) = 2.40$, $p = 0.02$; and hospital teaching status, $t(6) = 3.16$, $p = 0.00$, were significant predictors of the patient satisfaction measure of the percent of patients at each hospital who reported that YES, they were given information about what to do during recovery. They were significant predictors because the p-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status were significantly related with patient satisfaction

measure of the percent of patients at each hospital who reported that YES, they were given information about what to do during recovery.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital Magnet status, system affiliation status, and hospital teaching status in predicting the dependent variable of the percent of patients at each hospital who reported that YES, they were given information about what to do during recovery. The standardized coefficient value (beta) of hospital not-for-profit status (Beta = 0.10), hospital Magnet status (Beta = 0.11), system affiliation status (Beta = 0.04), and hospital teaching status (Beta = 0.06) was positive, implying that the percent of patients at each hospital who reported that YES, they were given information about what to do during recovery was greater for hospitals that have a higher number of staff, were not-for-profit hospitals, Magnet hospitals, system-affiliated, and teaching hospitals. On the other hand, the standardized coefficient value staffed hospital bed size (Beta = -0.20) was negative, implying that the percent of patients at each hospital who reported that YES, they were given information about what to do during recovery was lesser for hospitals that have more staffed beds.

Table 14

Regression Results of Model for Percent of Patients at Each Hospital Who Reported that YES, They Were Given Information about What to do During Recovery

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	82.92	0.20		416.69	0.00
	Staffed Beds	0.00	0.00	-0.20	-10.05	0.00
	Not-for-profit	0.94	0.21	0.10	4.41	0.00
	For-profit	0.19	0.26	0.02	0.74	0.46
	Magnet Hospital	1.82	0.29	0.11	6.30	0.00
	System-affiliated	0.39	0.16	0.04	2.40	0.02
	Teaching	0.60	0.19	0.06	3.16	0.00

Note. F (6, 3532) = 24.85, Sig. = 0.00, R Square (R2) = 0.04, N = 3538
a. Dependent Variable: Percent of patients at each hospital who reported that YES, they were given information about what to do during recovery.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 15 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest). The results of the model show that the hospital characteristics of staffed hospital bed size, $t(6) = -9.40$, $p = 0.00$; hospital not-for-profit status, $t(6) = 2.66$, $p = 0.01$; and hospital Magnet status, $t(6) = 9.63$, $p = 0.00$, were significant predictors of the patient satisfaction measure of the patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest). They were significant predictors because the *p*-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital not-for-profit status, and hospital Magnet status were significantly related with patient satisfaction measure of the patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest).

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital not-for-profit status, and hospital Magnet status in predicting the dependent variable of patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest). The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.19) was negative, implying that patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest) were lesser for hospitals that have a higher number of staff. On the other hand, the standardized coefficient value (beta) of hospital not-for-profit status (Beta = 0.06) and hospital Magnet status (Beta = 0.17) was positive, implying that patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest) was greater for hospitals that were not-for-profit hospitals and Magnet hospital.

Table 15

Regression Results of Model for Patients Who gave their Hospital a Rating of 9 or 10 on a Scale from 0 (Lowest) to 10 (Highest)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	68.65	0.39		178.23	0.00
	Staffed Beds	-0.01	0.00	-0.19	-9.40	0.00
	Not-for-profit	1.10	0.41	0.06	2.66	0.01
	For-profit	0.61	0.50	0.03	1.21	0.23
	Magnet Hospital	5.38	0.56	0.17	9.63	0.00
	System-affiliated	-0.14	0.31	-0.01	-0.43	0.67
	Teaching	0.59	0.37	0.03	1.60	0.11

Note. F (6, 3532) = 25.54, Sig. = 0.00, R Square (R2) = 0.04, N = 3538

a. Dependent Variable: Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest).

b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

Table 16 summarizes the results of the regression model to determine which hospital characteristics are significant predictors of the patient satisfaction measure of the patients who reported YES, they would definitely recommend the hospital. The results of the model show that the hospital characteristics of staffed hospital bed size, $t(6) = -2.82$, $p = 0.01$; hospital not-for-profit status, $t(6) = 3.94$, $p = 0.00$; hospital Magnet status, $t(6) = 10.58$, $p = 0.00$; and hospital teaching status, $t(6) = 3.43$, $p = 0.04$, were significant predictors of the patient satisfaction measure of the patients who reported YES, they would definitely recommend the hospital. They were significant predictors because the *p*-values were less than the level of significance value of 0.05, implying that hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital Magnet status, and hospital teaching status were significantly related with patient satisfaction measure of the patients who reported YES, they would definitely recommend the hospital.

The standardized beta coefficient was analyzed to determine the independent contribution and the relative importance of the significant predictor variables of hospital characteristics of staffed hospital bed size, hospital not-for-profit status, hospital Magnet status, and hospital teaching status in predicting the dependent variable of patient satisfaction measure of the patients who reported YES, they would definitely recommend the hospital. The standardized coefficient value (beta) of staffed hospital bed size (Beta = -0.06) was negative, implying that patients who reported YES, they would definitely recommend the hospital were lesser for hospitals that have a higher number of staff. On the other hand, the standardized coefficient value (beta) of hospital not-for-profit status (Beta = 0.09), hospital Magnet status (Beta = 0.19), and hospital teaching status (Beta =

0.07) was positive, implying that patients who reported YES, they would definitely recommend the hospital were greater for hospitals that were not-for-profit hospitals, Magnet hospital, and teaching hospitals.

Table 16

Regression Results of Model for Patients Who Reported YES, They Would Definitely Recommend the Hospital

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	68.12	0.43		158.81	0.00
	Staffed Beds	0.00	0.00	-0.06	-2.82	0.01
	Not-for-profit	1.82	0.46	0.09	3.94	0.00
	For-profit	0.80	0.56	0.03	1.43	0.15
	Magnet Hospital	6.58	0.62	0.19	10.58	0.00
	System-affiliated	0.09	0.35	0.01	0.26	0.79
	Teaching	1.40	0.41	0.07	3.43	0.00

Note. F (6, 3532) = 28.26, Sig. = 0.00, R Square (R2) = 0.05, N = 3538
a. Dependent Variable: Patients who reported YES, they would definitely recommend the hospital.
b. Predictors: (Constant), Teaching, System-affiliated, Not-for-profit, Magnet Hospital, Staffed Beds, For-profit

In relation to the impact of the hospital's Magnet designation in patient satisfaction, the results of the different regression models showed that nine of the 10 patient satisfaction measures showed statistical significance in the Magnet hospital group. Specifically, these were as follows:

- Hospitals with Magnet status had significantly more patients report that nurses "Always" communicated well than non-Magnet hospital.
- Hospitals with Magnet status had significantly more patients report that their doctors "Always" communicated well than non-Magnet hospital.
- Hospitals with Magnet status had significantly more patients report that they "Always" received help as soon as they wanted than non-Magnet hospital.

- Hospitals with Magnet status had significantly more patients report that their pain was "Always" well controlled than non-Magnet hospital.
- Hospitals with Magnet status had significantly more patients report that staffs "Always" explained about medicines before giving it to them than non-Magnet hospital.
- Hospitals with Magnet status had significantly more patients report that their room and bathroom were "Always" clean than non-Magnet hospital.
- Hospitals with Magnet status had significantly more patients report that YES they were given information about what to do during recovery than non-Magnet hospital.
- Hospitals with Magnet status had significantly more patients report that they gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest) than non-Magnet hospital.
- Patients reporting that YES, they would definitely recommend the hospital were greater for Magnet hospitals than non-Magnet hospitals.

Summary

In the regression analysis 9 of the 10 satisfaction items showed statistically significant higher levels of patient satisfaction in the Magnet hospital group. This specifically means that hospitals with Magnet designation were more likely to receive ratings that nurses "Always" communicated well; their doctors "Always" communicated well; they "Always" received help as soon as they wanted it; their pain was "Always" well controlled; staff "Always" explained medicine before giving it to them; their room and bathroom were "Always" clean; "YES", they were given information about what to

do during recovery; gave the hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest); and " YES", they would definitely recommend the hospital. The only measure of the 10 that was not significant for the Magnet hospital group was that the area around their room was "Always" quiet at night.

In the next chapter, a discussion of the findings is presented as well as the implications and recommendations for future research.

CHAPTER V: DISCUSSION

Patient satisfaction in the United States has become a major focus of health care organizations. This study was undertaken in order to determine if a hospital's Magnet status designation makes a difference in the outcome of patient satisfaction in comparison to non-Magnet hospitals. In this chapter the findings presented in Chapter IV are discussed.

The findings of this current study reflect that Magnet status designation by hospitals is positively and significantly associated with 9 of the 10 indicators that serve as measures of patient satisfaction. It was anticipated that 7 of the 10 indicators would be positively associated with Magnet status. Only one of the measures did not reflect a significant positive difference in the Magnet status group. The findings of the study reflect evidence that Magnet status designation may have benefits to organizations beyond that of being positive work environments for nurses. Confirmation in the findings that the seven measures that were expected to be positively associated with Magnet designation may be heavily influenced by the support for the nurses' working conditions in Magnet hospitals. This was consistent with the framework used for the study that reflects the health care organization, in this case the hospital, provide the structure in which nurses perform their work and processes taking place within reflect outcomes. These are interdependent and any change to one impacts the others. Magnet hospital nurses generally have a lower nurse to patient ratio, have a higher RN skill mix, and have higher levels of education, which have an impact on the nurses' ability to deliver care.

These nurses are likely better prepared, as well as, have a more manageable work load and are able to spend more time with patients to address their needs, and modify plans of care based on patients' responses to treatment.

The two additional satisfaction measures that were found positively associated with Magnet status – physicians always communicated well and room was always kept clean – may be due to the working relationships that nurses have with the interdisciplinary team. Magnet hospitals are known for valuing the work of nurses, and it is possible that nurses working in Magnet settings have influence outside their primary scope of direct care. The nurses in these settings may hold higher standards and expect the best housekeeping services for their patients and are able to collaborate better with physicians, which benefits the patient experience, as well.

In that the study reflected a positive relationship between Magnet status and patient satisfaction, it is consistent with previous studies that have shown that nurses who reported positive work environments were found to have patients who were more satisfied with their nursing care than those reporting an unfavorable work environment (Aiken et al, 1999). Previous research, however, has primarily included subjective reporting, used relatively small sample sizes, or limited the analysis to that of one geographical area or only a few states. This current study adds to the body of research, as it is representative of a large sample size and takes into account the outcome of patient satisfaction across all states in the U.S. The other aspect of the study that provides a unique contribution is that many of the studies have reported on patient satisfaction using different survey instruments, which limits a true comparison between organizations. The survey measures used to evaluate satisfaction in this study are from a standardized survey

that is administrated and analyzed in the same way for all the hospitals included in the study.

The current study has far reaching implications for organizations in several ways. First, because of the mandates by regulatory agencies and quality improvement organizations that hospitals become more patient-centered, the positive patient experience in Magnet hospitals is reflective of this direction. Those hospitals with favorable patient satisfaction scores are more likely to rate better on reviews by these agencies and show evidence of their progress. The results also are consistent with recommendations that one strategy to improve hospital performance is through transformation of the work environment of nurses (IOM, 2003).

The study has implications for potential improvements in a hospital's business performance, in terms of both finance and reputation. In the current climate of Value Based Purchasing for health care services, hospitals are incentivized to improve the patient experience, and in some cases incur penalties or reductions in reimbursement for the lack thereof. Increasingly, patient satisfaction survey results are publically reported. Given competition for business, those hospitals that are known for great satisfaction are more likely to have an edge. In addition, patients who are highly satisfied are likely to be return customers and recommend the hospital to others (Kutney-Lee et al., 2009). While not yet known the full impact, the implementation of the government's Health Reform program stands to infuse millions of individuals into the market as potential customers. This group previously had no choice of where they received care because they were uninsured and lacked access. It would be in the interest of hospitals to be prepared to take on this potential new business.

This study has implications in support of the ANCC Magnet program. For many years, the program has focused primarily on process rather than outcomes. The study supports the limited but growing evidence that the program may be impacting the outcomes of patients, specifically as it as it relates to the patients' experiences. The findings further extend and support the value of the nursing profession in general. We know from studies that when patients are highly satisfied with their experience, they are more likely to comply with treatment, have lower incidence of returning to the hospital within 30 days, and utilize preventative services (Doyle et al., 2013). Given the high correlation with Magnet status on the positive patient experience, this study points to nurses as key to influencing patient outcomes. The study contributes to factors that hospitals might want to consider when weighting the benefits and the return on investment by pursuing Magnet designation.

Conclusion

The study demonstrated a positive and statistically significant relationship between Magnet designation and patient satisfaction. As evaluated against the 10 HCAHPS patient experience questions, it showed a greater likelihood that patients would rate their experience at the higher level on more of the measures than expected for Magnet hospitals. Given that nurses spend the greatest amount of time with patients during their hospital stay, interactions with patients were anticipated to have a significant impact on items associated with nursing care. Of the HCAHPS survey measure items, 7 of the 10 measures were expected to be rated significantly better in the Magnet hospitals – nurses "always" communicated well; patient "always" received help as soon as they wanted; pain was "always" well controlled; staff "always" explained about medicines

before giving them; and "yes", they received information about what to do during the recovery period; would rate the hospital as 9 or 10 overall; and would definitely recommend the hospital. Given that the requirements of Magnet hospitals are to develop specific actions to improve patient satisfaction, those seven areas would likely be areas of focus. These factors provide evidence that those practice measures being deployed in Magnet hospitals may, in fact, be having a positive impact on patient outcomes, specifically related to patient satisfaction. The two other items that proved to be positive and significantly related to Magnet designation were, physicians "always" communicated well and the room was "always" clean. These two items are clearly reflective of other disciplines in the hospital setting that have a very specific focus and are considered to be non-nursing related. The "essentials of magnetism" include a number of positive characteristics, one of which is strong nurse-physician relations. The findings related to the two global measures – patients rating the hospital as 9 or 10 and patient would definitely recommend the hospital – are consistent with other studies that report patient satisfaction with nursing care as consistently having the highest correlation with overall satisfaction and is considered a major determinant of the patient's overall satisfaction level (Atkins et al., 1996). The one item not significantly more positive was that of the area around room was "always" quiet at night. Due to the "around-the-clock" nature of various activities, such as alarming equipment and frequent need to assess and administer treatments even during the night in hospitals, this is one area that would challenge any hospital to meet patients' expectations around the environment "always" being kept quiet at night. The issue with noise around patients' rooms at night is consistently noted on the

Hospital Compare publically reported website to be the very lowest scored item by patients for all hospitals of the 10 measures tracked.

Some of the considerations for hospitals considering pursuing Magnet designation would be the significant cost and association with preparing the organization for the survey, the application processing fees, and the requirement of sustaining the designation ongoing. There is considerable staff time associated for attending meetings and completing required documentation to meet the Magnet standards. This study provides evidence that there may actually be a return on the investment for hospitals to take the Magnet journey, as the results indicate a significant difference in the patient experience in the Magnet hospital group versus non-Magnet hospital group and supports the business case for pursuing Magnet designation

While it is recognized that hospitals are very complex organizations, and there are other factors that may influence patients satisfaction, this study clearly points to the fact that the shift in the focus of the ANCC to that of patient outcomes is on track and supports the efforts of hospitals to continually improve on their care delivery models to improve the patient experience. The study expands the body of knowledge related to identification of those areas where hospitals might direct limited resources that demonstrate a positive return for the efforts.

Recommendations

Given the strong evidence of the positive impact of patient satisfaction on outcomes for patients, this is an area where continued research is needed. Although a growing number of hospitals are seeking Magnet designation, just fewer than 10% have been successful at reaching the goal. Areas for further research include a detailed

evaluation on the cost of becoming and maintaining Magnet status designation versus the return on the investment. The CMS has announced that additional patient satisfaction measures are being developed and will eventually become mandatory, such as emergency services care. Research on the relationship of Magnet status in other settings of the hospital will be important to examine in the future. There is standard data collection on clinical outcomes measures for hospitals across the U.S. by CMS, and this would be an additional area where the relationship between Magnet status and improvements on those clinical measures for patients should be explored. This would also be in keeping with the "new" Magnet model, which places more emphasis on patient outcomes and directing efforts on determining what interventions taking place in Magnet hospitals are contributing to making the difference and improving outcomes for patients.

Magnet hospital work environments place strong emphasis on the culture in which the largest group of clinical professionals practice. Given the demand of health care reform, changes in reimbursement for services that are value-based, and competition, it is important that health care leaders consider the impact that improvements in the health care work environment may benefit the outcome of achieving a "patient-centered" approach, which leads to greater patient satisfaction and clinical outcomes.

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